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LICHEN SCLEROSUS ET ATROPHICUS WITH BULLOUS LESIONS AND EXTENSIVE INVOLVEMENT

Report of a Case

HELEN RELLER GOTTSCHALK, M.D.
AND
ZOLA K. COOPER, Ph.D.
ST. LOUIS

A CASE of lichen sclerosus et atrophicus is presented because of the extensive involvement of the skin and because of the numerous bullous lesions.

The clinical and pathologic findings in lichen sclerosus et atrophicus were authoritatively presented by Montgomery and Hill [1] in 1940. They observed 46 patients with the disease and succeeded in distinguishing the clinical and histologic changes from those of morphea guttata and lichen planus atrophicus.

The characteristic clinical feature of lichen sclerosus et atrophicus is a white papule, which may be discrete or one of a group forming a plaque. On the surface of each papule is a dark plug, resembling a comedo, or a tiny depression which is the site of a former plug. Atrophy may occur in the later stages, with parchment-like wrinkling and greater prominence of the plugs.

According to Montgomery and Hill [1] the characteristic histologic features consist of relative and absolute hyperkeratosis, with keratotic plugging of the orifices of the hair follicles and dermal appendages; atrophy of the rest of the epidermis, with flattening and loss of the rete ridges; mild liquefaction degeneration of the basal layer; lymphedema in the upper portion of the cutis, with edematous changes in the connective tissue fibers beneath the epidermis, and a cellular infiltrate in the midcutis beneath the area of edema. There are no obliterative changes in the deeper blood vessels, such as occur in morphea guttata.

Myers [2] and Schubert [3] described patients with typical lichen sclerosus et atrophicus. Bullous formation was noted in their patients.

From the Dermatological Department and the Pathological Department of the Barnard Free Skin and Cancer Hospital and the Washington University School of Medicine.

1. Montgomery, H., and Hill, W. R.: Lichen Sclerosus et Atrophicus, Arch. Dermat. & Syph. **42**:755-779 (Nov.) 1940.

2. Myers, W. K.: Lichen Sclerosus: Case Report, Brit. J. Dermat. **48**:658-660 (Dec.) 1936.

3. Schubert, M.: Zur Kenntnis des Lichen sclerosus atrophicans, Dermat. Wchnschr. **103**:1653-1662 (Dec. 19) 1936.

Schubert stated that in his patient some of the patches were elevated above the surrounding skin and, after the insertion of a needle, a drop of clear yellow fluid was obtained. The histologic findings in both of these patients corresponded with those described by Montgomery and Hill,[1] who did not mention vesicle formation in any of their own cases

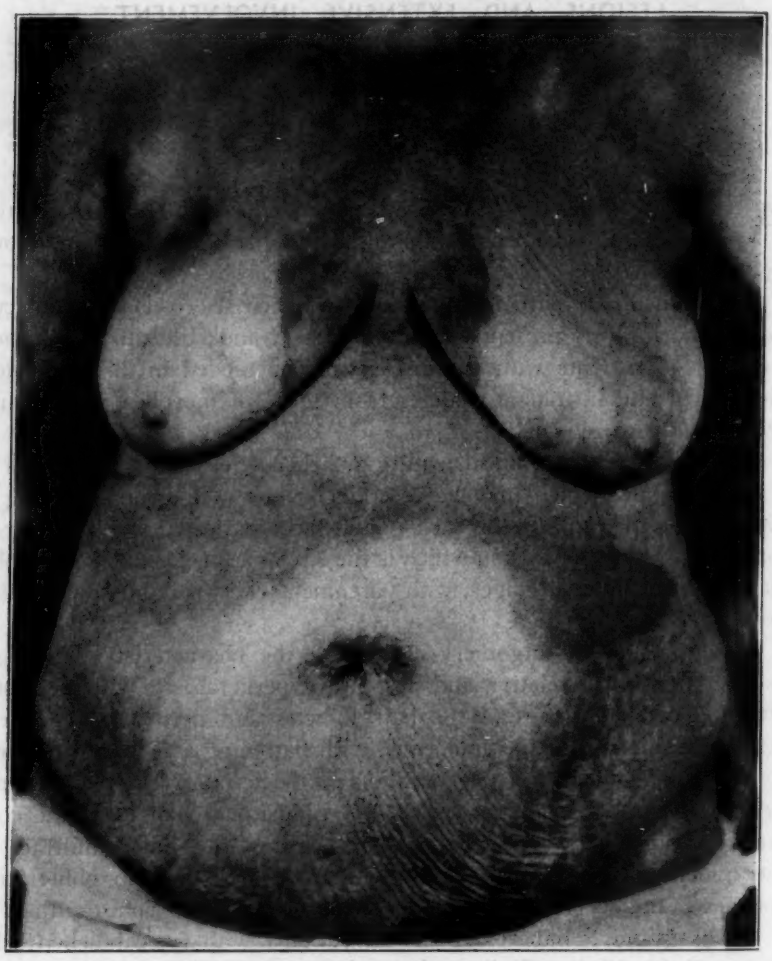

Fig. 1.—Pale, atrophic, ivory-colored skin over the lower part of the abdomen, studded with follicular plugs.

but who stated that the edema in the upper cutis may be so great as to result in the formation of vesicles just beneath the epidermis. These vesicles may be apparent on clinical examination. Anderson [4] sum-

4. Anderson, G. R.: Bullous Lichen Sclerosus et Atrophicus, Arch. Dermat. & Syph. **49**:423-426 (June) 1944.

marized the reports of cases of lichen sclerosus et atrophicus with the formation of bullae and added 1 case. He thought that many of the conditions reported as localized scleroderma with bullous lesions were actually bullous lichen sclerosus et atrophicus.

Fig. 2.—Atrophic skin and brownish pigmentation of the lower part of the back, with bullae in the folds below the buttocks and on the left flank.

REPORT OF CASE

M. C., a 64 year old white woman, entered the clinic on Aug. 14, 1944, complaining of "tightness" of the skin of the folds of the body of seven weeks' duration. The skin over the buttocks was so "tight" that she had not been able to sit for several weeks.

Examination revealed that the skin of the entire body except that of the face, hands and feet was dry and wrinkled. In the folds of the body, it was loose and moved easily over the deeper structures. The color was pale ivory under the breasts and over the abdomen (fig. 1). About the spine and in a circular area

Fig. 3.—Lichen sclerosus et atrophicus. Section of a specimen from the abdomen, showing decided hyperkeratosis, atrophy of the rest of the epidermis, pronounced lymphedema at the junction of the dermis and epidermis, homogenization and edema of the connective tissue in the upper portion of the dermis and a cellular infiltrate in the midcutis. Hematoxylin and eosin. × 140.

about the anus, there was some brown pigmentation (fig. 2). The color of the remainder of the skin appeared normal. Follicular plugs, resembling comedos and easily expressed, were especially noticeable on the ivory-colored skin of

the abdomen and chest. The folds of the labia minora were absent, and on the inner surfaces of the labia majora there were small patches of white, shiny skin. The distribution of hair was normal on the head, but there was no hair in the axillas and little on the labia majora. The nails were normal.

On August 28 a large raw area, 4 by 6 cm. in diameter, was noted beneath the right breast. An antiseptic ointment was prescribed to be applied to this area twice daily. On September 4 large bullae were noted in the perianal region.

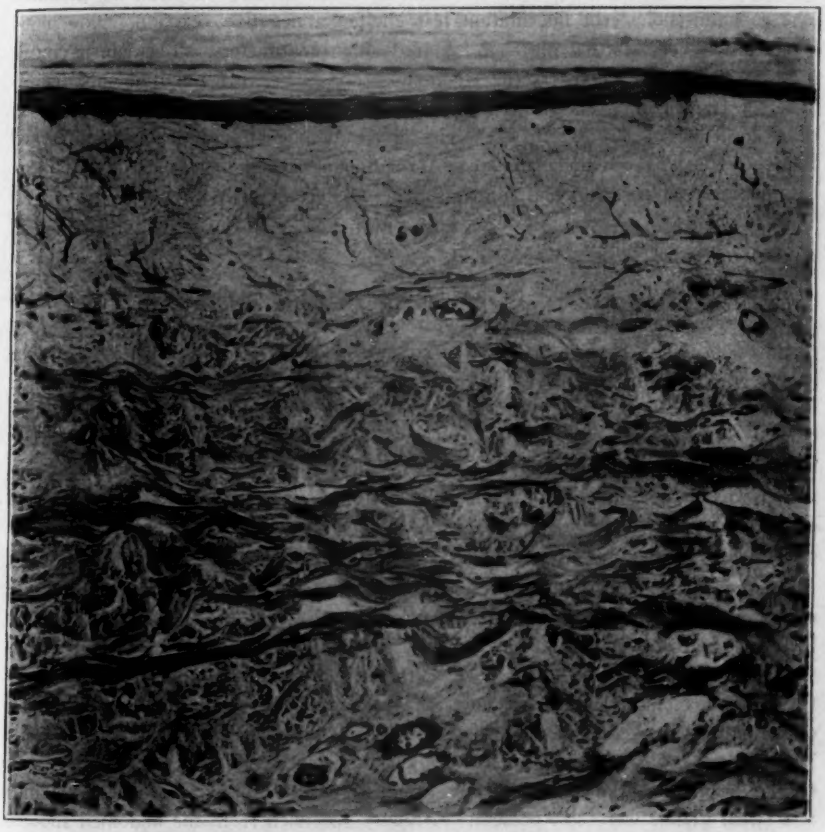

Fig. 4.—Lichen sclerosus et atrophicus. Section from the abdomen, showing preservation of the black-stained elastic tissue fibers and their separation from the epidermis by edema. Weigert stain. × 175.

During the next week other bullae appeared on the abdomen, on the sides of the legs, in the fold below the buttocks and in the axillas (fig. 2).

The patient was admitted to the hospital on September 21. Physical examination revealed a well developed, obese woman. The abnormal physical findings were limited to the changes in the skin except that one observer thought that he felt the tip of the spleen.

Laboratory Data.—There were 3,890,000 red blood cells, 12.5 Gm. of hemoglobin and 5,800 white blood cells, with 67 per cent polymorphonuclear leukocytes,

5 per cent stab forms, 2 per cent eosinophils, 22 per cent lymphocytes and 4 per cent monocytes. Sternal marrow puncture revealed that the bone marrow was hyperplastic with a slight increase in erythroid elements. The myeloid elements were normal. The eosinophils were increased, as were the plasma cells and clasmatocytes. The results of examination of the urine and stools were normal. The Kahn reaction was negative. The nonprotein nitrogen content was 16 mg. per hundred cubic centimeters. The total protein content was 7.1 Gm. per hundred cubic centimeters, with 4.2 Gm. of albumin and 2.9 Gm. of globulin. The cephalin-cholesterol flocculation test elicited a negative reaction. The blood cholesterol level was 208 mg. per hundred cubic centimeters. The icterus index was 9. The blood sugar (fasting) content was 115 mg. per hundred cubic centimeters. Gastric analysis showed 51 degrees of free acid. The basal metabolic rate was 0 and + 1 per cent. A series of roentgenograms of the gastrointestinal tract was reported as indeterminate. A roentgenogram of the chest showed aortic lengthening and peribronchial infiltration of indeterminate nature.

Biopsies were performed on specimens of the skin of the axilla and abdomen on September 28.

Microscopic Description.—In the biopsy specimen from the axilla the epidermis showed pronounced hyperkeratosis, with plugging of the hair follicles and sweat gland ducts. The hyperkeratosis was so extensive that the keratin layer on the surface of the skin was more than twice as thick as the remaining layers of the epidermis below it. Except for this thickening of the stratum corneum the epidermis, as a whole, was so atrophic that it was composed of only two to three layers of cells. The rete pegs were completely obliterated. The granular layer, which was present throughout, consisted of only one row of extremely flattened cells. The cells of the squamous and basal layers were so compressed that they could scarcely be differentiated (fig. 3).

In the upper third of the dermis, there was so much edema that in places the epidermis was separated from the dermis by collections of fluid. The collagen fibers showed homogenization and edema. A Weigert stain revealed no destruction of the elastic tissue, but because of the edema the fibers were separated from the epidermis (fig. 4). In the center of the dermis there was an irregular band of cellular infiltrate, made up of lymphocytes together with a few plasma cells. This infiltrate was denser about hair follicles and blood vessels. The blood vessels of the dermis showed no obliterative changes. Hair follicles, sebaceous glands and sweat glands were still present. A biopsy specimen from the abdomen showed changes similar to those seen in the biopsy specimen from the axilla.

While visiting this clinic Dr. Hamilton Montgomery, of the Mayo Clinic, examined both the patient and the microscopic sections and agreed that this was a case of lichen sclerosus et atrophicus.

Treatment.—While the patient was in the hospital, a soothing ointment (2 per cent ichthammol in 30 per cent paste of zinc oxide) was applied and infra-red irradiation was given to the ulcerated areas.

New bullae appeared on the inner sides of the legs and on the lower part of the back on November 20. Use of the ointment was discontinued, and 4 per cent bismuth tribromphenate in white petrolatum was applied. At weekly inter-

vals for four weeks the patient received roentgenologic treatments to the ulcerated areas beneath the breasts, in the axillas and on the legs and abdomen.[5] The patient was discharged on December 19, with all the bullous lesions healed except those of the legs.

She returned to the clinic at intervals of two weeks for further roentgenologic treatment to the lesions of the legs, which healed promptly after a total dose of 600 r had been given to them.[5] On April 11, 1945 new bullae appeared in the right axilla and on the left knee, and on May 16, 1945 bullae appeared about the navel. These areas healed promptly after roentgenologic treatment. No new

Fig. 5.—Large area of superficial ulceration with bullae at the periphery over the left flank.

bullae appeared until Sept. 10, 1945. At that time a large area (10 by 12 cm.) of superficial ulceration was noted over the left flank and side of the abdomen. At the periphery of the lesion were many bullae (fig. 5). This large area was almost completely healed on Oct. 8, 1945, although only two roentgenologic treatments of 50 r each, two weeks apart, had been given.

5. One hundred roentgen units each (85 kilovolts and 5 milliamperes through an 0.8 mm. aluminum filter at a focal skin distance of 10 inches [25 cm.]) was given.

SUMMARY

A case of extensive, bullous lichen sclerosus et atrophicus is presented in which the clinical and histopathologic changes were identical with those previously described for this disease.

The bullous lesions healed promptly after treatment with superficial roentgenologic therapy. There was a tendency for the bullous lesions to recur.

Washington and Theresa Avenues.

EXPERIENCES IN MILITARY DERMATOLOGY

Their Interpretation in Plans for Improved General Medical Care

DONALD M. PILLSBURY, M.D.
AND
CLARENCE S. LIVINGOOD, M.D.
PHILADELPHIA

THE ARMED forces of the United States have completed one of the largest experiments in group medical practice that has ever been undertaken. Regardless of some errors which were made in scientific methods, in planning and in organization, it is believed that the history of the medical services will demonstrate conclusively that the individual soldier and sailor received medical and surgical care of a high standard. It is our purpose in this paper to assess, insofar as our individual experiences will allow, the successes and failures which dermatology, as one of the medical specialties, contributed to the over-all mission of prevention and cure of disease in the United States Army.

Official histories dealing with various aspects of the Medical Department of the Army will appear in due course. It is believed that these will be written objectively and honestly. They will furnish much information which should be of interest and value to students of military and civilian medical practice. In a short discussion written by two specialists in dermatology, it would be comforting, though dangerous and shortsighted, to be content merely with a listing of the accomplishments relating to dermatology during the war. However, we can state that during World War II, for the first time, dermatology was recognized as an important specialty in military medicine. Prior to mobilization of the Army, there was not a single qualified dermatologist in the Army Medical Corps, and Army hospitals did not include a department of dermatology. Throughout the war, it became increasingly apparent

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Read at the Sixty-Sixth Annual Meeting of the American Dermatological Association, Hot Springs, Va., June 10, 1946.

Dr. Pillsbury was formerly senior consultant in dermatology in the European Theater of Operations, Army of the United States (1942 to 1945).

From the Department of Dermatology and Syphilology, University of Pennsylvania School of Medicine, and the Hospital of the University of Pennsylvania.

Dr. Livingood has been successively chief of dermatology service, Indiantown Gap Station Hospital (1941 to 1942); chief of dermatology service, Twentieth General Hospital, Assam, India (1943 to 1945), and consultant in dermatology, Office of the Surgeon General (March to December 1945).

that cutaneous diseases constituted one of the major causes of disability and hospitalization and that specialized care of patients with these conditions resulted in a decrease of disability and hospitalization. Dermatology sections were, therefore, established in almost every hospital of more than eight hundred beds, and every effort was made to assign medical officers with special training in dermatology to these hospitals, insofar as such officers were available. Those who are responsible for the planning of graduate training of medical officers in the postwar medical corps are fully aware of the importance of diseases of the skin in military medicine, and plans have been formulated for graduate training of selected medical officers and utilization of civilian consultants to assist in this program.

While there is no intention to dwell on minor difficulties which were encountered, the clearcut demands of military medicine emphasized certain deficiencies in dermatologic knowledge and practice to a degree not always apparent in civilian life. Moreover, the place which dermatology occupies in medicine as a whole becomes more clearly evident in a large cooperative group effort than is the case in isolated private practice. There are serious gaps in the knowledge of diseases of the skin and, in our opinion, deficiencies of emphasis and effort in the investigation of problems related to disturbed states of the skin. They are our particular concern in this paper.

Many of the figures concerning the relative incidence of disease in various theaters of operation are not yet available. Nevertheless, certain statements concerning the chief problems in dermatology encountered in the Army may be made with accuracy. These will be considered under the following headings: (1) dermatologic disease as a source of disability in the Army; (2) planning and investigation to prevent and cure cutaneous diseases in the Army; (3) personnel (the utilization of medical officers with special training in diseases of the skin and the competence of general medical officers and of specialists in the management of dermatoses); (4) administrative problems in relation to dermatology; (5) the relation of dermatology to venereology; (6) cutaneous syndromes occurring with frequency in military practice (the chief advances in the prevention and cure of cutaneous diseases during the war years), and (7) the gaps in knowledge and errors in professional practice which led to increased dermatologic disability.

INCIDENCE OF DERMATOLOGIC DISEASE IN THE ARMY

Disability from diseases of the skin varies greatly in accordance with the climatic and hygienic conditions under which troops are living. The relative incidence in comparison with that of other medical diseases and of battle wounds also shows decided variation, largely dependent on the

prevalence of epidemic and endemic disease among the troops concerned and on whether or not they are engaged in active combat. In only one theater of operations, the European, did surgical admissions to hospitals exceed the medical admissions.

As stated previously, the admissions to the sick list for various types of disease and injury during the entire war have not yet been completely tabulated. However, data on the incidence of dermatologic disease in various large representative series are available. It should be kept in mind that all these figures apply to a group of young men; the diseases of women and of persons past the age of 50 are sparsely represented.

The admissions to Army hospitals primarily because of a cutaneous disease, in terms of dermatologic patients per hundred thousand troop strength per year in the Zone of the Interior and in various theaters of operation, are given in table 1.

TABLE 1.—*Incidence of Cutaneous Disease in Various Theaters of War*

Place	Admission for a Cutaneous Disease per 100,000 Men in 1944
Zone of the Interior	5,551
North American Theater	3,731
Latin America	6,805
Mediterranean area	7,621
Middle East	10,399
Asiatic area	8,326
Pacific Ocean area	8,261
Southwest Pacific area	10,267

Admission rates for cutaneous diseases were approximately twice as great for troops overseas (80 patients admitted to the hospital per thousand men per year) as they were for troops in the United States (42 per thousand men per year). The duration of hospitalization of patients with diseases of the skin varied greatly but was often prolonged, as indicated by the fact that patients for whom transfer from an overseas station to the United States became necessary because of a cutaneous disease averaged a total stay in the hospital of five and a half months. In such patients, therefore, the period of hospitalization was of major order, of a duration which might be expected from a serious chronic medical disease or a severe injury incurred in battle.

Various other representative figures from hospitals in the European and Mediterranean theaters are available, as shown in table 2.

The incidence of cutaneous diseases in patients seeking treatment in an Army dispensary or outpatient department is difficult to determine accurately because it is frequently not feasible to preserve records on

these admissions. We have observed a large number of Army outpatient "clinics" of one type or another and have discussed the problem with numerous medical officers. It is estimated conservatively that between 15 and 25 per cent of all admissions to a dispensary or outpatient department in temperate climates are due to a disease of the skin. This percentage is increased by reason of overseas duty and a tropical climate and frequently reached 60 to 75 per cent of all patients seeking dispensary care.

The high incidence of cutaneous diseases in the Southwest Pacific area is well known. As representative of this, two examples of the disabling quality of such diseases may be cited. In an essential technical medical data report dated May 5, 1944, the following statement appeared:

TABLE 2.—*Incidence of Cutaneous and Venereal Diseases in Different Areas*

Hospital	Total Admissions	Primary Diagnosis of Cutaneous Disease		Venereal Disease	
		No.	%	No.	%
Fifth General, North Ireland (1942).....	7,049	468	6.6	395 (all types)	5.6
Tenth Station, North Ireland (1942).....	2,093	101	10.0	131 (all types)	6.2
British Isles (Nov.-Dec. 1943).....	14,408	1,035	7.2	422 (syphilis only)	2.9
Forty-Fifth General, Mediterranean (1944) (Manson, R. O.; Kennedy, C. B.; Buchanan, R. N., and Imhoff, R. E.: Major Disease Problems in Natousa, report to the Surgeon General of the Army, 1944....	18,395	721	4.0		

"Diseases of the skin are an important factor in noneffective rates in the forward areas. Approximately 7 per cent of conditions in patients admitted to hospitals and about 4 per cent of conditions of patients evacuated to the United States are due to diseases of the skin. Many dispensaries show as high as 75 per cent of those reporting to sick call as suffering from disease of the skin." During the period Nov. 1, 1944 to Nov. 1, 1945, evacuation of approximately 14 to 16 per cent of all patients to the United States was due to diseases of the skin. Many were sent home because of a primary diagnosis of a cutaneous disease. In some months this was the most frequent cause of evacuation, with the exception of neuropsychiatric disorders, and in all months it was a more frequent cause of evacuation than battle casualties. In many general hospitals stationed in tropical overseas areas, the percentage of admissions to hospitals because of cutaneous disease increased to 15 to 20 per cent of the total during the latter part of 1944 and the first six months of 1945.

INCIDENCE OF VARIOUS DISEASES OF THE SKIN

The types of cutaneous diseases seen varied considerably in different parts of the world, with the order of incidence varying in different areas and different military units:

Overtreatment of inflammatory or parasitic diseases of the skin
Superficial pyogenic infections
Chronic eczematous eruptions of various types
Superficial fungous infections
Contact dermatitis from plants, uniforms, footgear and other material
Scabies
Insect bites
The quinacrine hydrochloride (atabrine) syndrome (chronic lichenoid and eczematoid dermatitis)
Diphtheria cutis
Seborrheic dermatitis
Warts, especially plantar
Extensive acne
Atopic dermatitis
Urticaria
Psoriasis

The entire group of "rare" dermatoses was of no significance in the total disability. It was a common complaint of dermatologists overseas that a major portion of the published dermatologic papers were of no practical value and little interest to them because the reports dealt at length with diseases which would be seen with great infrequency, even in a highly specialized dermatologic practice. It would seem that a disproportionate amount of time is spent in investigation of diseases which are responsible for an infinitesimal proportion of the total disability from dermatologic disease.

PLANNING AND INVESTIGATIONS TO PREVENT AND CURE DISEASES OF THE SKIN IN THE ARMY

In any statement on prevention and cure in military dermatology during the recent war, it is difficult to comment constructively without being bluntly critical. The truth of the matter is that little attention was paid by the Army or its civilian advisory board, the National Research Council, to this problem until late in the war. The only exceptions were the projects of the Office of Scientific Research and Development on dermatophytosis, which were so ably conducted by Dr. J. Gardner Hopkins and his associates and Dr. Edmund Keeney and his group. The most significant contribution of organized civilian investigation in the prevention and treatment of cutaneous disease was that made by entomologists working under projects supported by grants recommended by the National Research Council. These investigators developed several compounds which were useful in the prevention of cutaneous disease caused by parasitic infestation and were chiefly responsible for the study and adoption of the Swiss compound DDT (4,4′-dichlorodiphenyltrichloroethane) for use by the armed forces.

In 1942, at the instigation of the Army and the Committee on Medicine of the National Research Council, the preparation of a simple manual

dealing with the diagnosis and treatment of cutaneous diseases commonly encountered in military medicine was undertaken. In view of the numerous excellent textbooks in dermatology, the need for such a manual might be questioned. However, it was apparent that many of the remedies recommended in textbooks were not available in the Army Supply Catalogue, nor was inclusion of most of them practically possible in view of the already enormous complexities of Army medical supply. Also—and this was a startling revelation to us—many physicians have had so little opportunity for dermatologic training in medical school and internship that they are unable to arrive at a diagnosis of even the simplest conditions of the skin. Working alone in isolated stations, they required help in arriving at a reasonable working diagnosis and proper simple treatment in any given case. With the cooperation of the Navy, such a manual was prepared and distributed widely throughout the armed forces.

In view of the large scale studies which were initiated on many special problems in other fields of medicine and surgery, it was a matter of some surprise to us that more studies were not undertaken in certain aspects of dermatology which had proved to be important sources of disability in other armies. These included particularly the prevention and cure of scabies, the general problems of drug sensitization, the prevention and cure of pyogenic infections, methods of protecting the skin against contact sensitization, the effects of a warm environment on the skin itself and the untoward effects of various drugs on the skin. As noted previously, late in the summer of 1942, fruitful studies on the prevention and treatment of fungous infections of the skin were initiated, but there was no correlated study of superficial pyogenic infections until the summer of 1945. All these problems were, of course, under study in civilian institutions, but there was nothing even remotely comparable to the scope of official studies initiated on a wide variety of other diseases and hazards, many of which proved to be of far less significance as a source of disability than cutaneous diseases. This fact is not recorded in criticism, but rather to illustrate a curious scientific blind spot or indifference which many clinicians and scientists have toward experimental and clinical problems relating to the skin.

PERSONNEL

The utilization of specially qualified personnel in an army, in the capacities for which they are best suited is a problem of great difficulty. Some of these difficulties are obvious; others do not become apparent until one has been charged with some responsibility for solving them. It seems obvious, on the basis of civilian experience, that any well trained specialist should be assigned where he can care for a considerable number of patients with diseases of which he has special knowledge. On the

other hand, the functions of many military hospitals changed rapidly at times, and a general hospital with many patients presenting diseases of the skin might suddenly be designated as a special center for some type of surgical case and the dermatologic and other medical patients evacuated elsewhere. It was not easy to transfer the physician along with the patients, and indeed it was often unwise to do this as a temporary expedient.

Dermatologists, as medical officers in the broad sense, had certain nonmedical duties to perform as responsible persons in a military organization. Much criticism has been leveled against the necessity of too much of this, and some criticism was entirely justified. But one had only to see a few units composed primarily of medical specialists rather than of officers of the Army with special skills to realize the lack of organization, discipline and efficiency which could soon pervade such a unit, with resultant poor care of patients. In addition, certain types of combat medical duty were so demanding physically as to make it essential that young medical officers, regardless of their special training, be assigned to such duty. Some dermatologists, because of opportunities for promotion or for special considerations, such as flight pay, elected to take assignments which involved purely administrative duties or that otherwise offered no opportunity for the practice of a specialty.

The peak number of medical officers in the Army was 48,319. Of this, there was a total of 137 officers in the Army with recognized competence in dermatology, i. e., an "A".or a "B" rating. Grade "A" and "B" dermatologists constituted the officers who had had recognized formal training in the specialty. Of this group of 137, 107 officers were possessors of certificates from the American Board of Dermatology and Syphilology; the remaining 30 had demonstrated such competence and had had sufficient formal training to justify a rating of "B." In addition, there was a group of 151 medical officers who had had a small amount of formal training in dermatology and who had demonstrated sufficient competence in the specialty to justify a rating of "C." These officers were ordinarily capable of being chief of a dermatologic service in a small hospital or one primarily concerned with the care of battle casualties. In addition, there was a considerable group of officers who had expressed an interest in dermatology but were generally without any training in the specialty except that which they had obtained in the Army. It is from this group that a considerable proportion of the veterans seeking graduate training in dermatology have been derived.

Of the group of 107 holders of certification in dermatology by the American Board of Dermatology and Syphilology, 102 were in posts offering an opportunity to do professional work in dermatology on V-E day. This favorable ratio was by no means representative of the

situation which prevailed in the early days of the war; it had been brought on by the increasing evidence throughout the war that dermatologic disease was responsible for much disability and by the efforts of persons in various headquarters [1] who were primarily interested in adequate professional service to patients.

While there were many individual instances of officers with an interest in dermatology who had no opportunity to care for dermatologic patients, the situation of dermatologists was obviously far more favorable than that of gynecologists, obstetricians and pediatricians. War is no respecter of the lives or well-being of the persons engaged in it, and displacement of some specialists from their specialized professional pursuits is often unavoidable, though obviously wasteful and inefficient, as only war can be. Fortunately, with proper planning, such conditions can be avoided in times of peace.

Another striking feature of the management of cutaneous diseases in the Army was the incontrovertible fact that many students graduate from medical schools in the United States with only the haziest knowledge of dermatologic diagnosis and treatment. They have no real understanding of the ten or twelve groups of diseases of the skin which constitute over 95 per cent of the general practice of dermatology. In addition, they frequently have had no real opportunity to learn the indications and proper use of the few remedies which constitute the backbone of dermatologic therapy. It was a matter of considerable surprise to us that many highly trained and competent specialists in other fields, particularly in internal medicine, had practically no knowledge and little interest in diseases of the skin. Some well trained internists have a good working knowledge of dermatology, but this was by no means the rule and constituted a striking deficiency of the training offered in some well known centers of internal medicine.

ADMINISTRATIVE PROBLEMS

It became increasingly evident throughout the war that one of the chief problems in furnishing good professional care was in bringing the patient and the physician best qualified to care for him together. The military ideal of a medical officer qualified to care for almost any-

1. In particular, our respective chiefs, Brigadier General Hugh J. Morgan, chief consultant in medicine to the Surgeon General, and Colonel William S. Middleton, chief consultant in medicine in the European Theater of Operation, did everything in their power to effect the best possible utilization of medical officers with recognized competence in dermatology and syphilology and to bring about a dermatologic consultant system in all major commands. It should be emphasized that this task was most difficult because tables of organization had not provided for such consultants.

thing from which a soldier might suffer was obviously a fanciful one, though stubbornly cherished by some administrators. While it was obvious that a soldier with a compound fracture of the femur would have to be removed as soon as feasible to a place where he could have expert care and rehabilitation, this was not so obvious in patients with chronic eczematous dermatitis or psoriasis. Because of the lack of appreciation by many administrators (particularly surgeons of armies in the field) and other physicians of the extreme importance of an accurate diagnosis and adequate early care of a patient with a disease of the skin, it was too often impossible to provide good treatment before the eruption had reached a phase which might require weeks or months of hospitalization before the soldier could be returned to duty. Obviously it was the function of commanding officers and medical administrators to keep as many men on duty as possible and to resist unwarranted removal of patients to hospitals farther back in the lines of communication, and a delicate balance had to be struck between medical and military demands.

The decisions as to whether or not a soldier with a cutaneous disease should be evacuated to a hospital in the rear or in another case whether he should be allowed to go overseas or whether he should be placed on limited duty were often difficult to make. It was in this phase of medical military administration that well qualified dermatologists were of the greatest value. Accurate diagnosis and a "sense" as to the prognosis in the individual case were essential. The value of adequate modern long term graduate training in the development of persons capable of making such decisions was repeatedly apparent in the Army.

Another phase of military dermatology which developed gradually during the war and in which the policy in various service commands, theaters of operation and armies varied greatly was in the facilities for consultation and special treatment which were made available. This depended to a great extent on the recognition by the responsible commanding officer that dermatologic disease was capable of causing considerable disability and on the advice of his medical consultant that something could be done about its prevention and cure, chiefly by way of furnishing adequate consultative and special treatment facilities. In the European Theater of Operations a Division of the Chief Surgeon was established in 1942, in which various branches of medicine and surgery, including dermatology, were represented by full time consultants. In the Office of the Surgeon General, on the other hand, dermatology was not represented in the Medical Consultants Division until March 1945, an almost unbelievable circumstance in view of the crisis in dermatologic disability which had gradually been gathering force in the various Pacific theaters for some time during the previous three years. A full time adviser or consultant in dermatology was available in one of the Pacific theaters, but not until 1943 (Dr. John V. Ambler). The need

for dermatologic consultants in the various armies, particularly in the Pacific, was recognized and repeatedly emphasized in higher headquarters (Chief Consultant in Medicine, Surgeon General's Office), but this gross deficiency was not admitted by most of the responsible commanding medical officers in the armies despite the obvious importance of cutaneous diseases as a source of lost man-days and the need for expert advice in formulating uniform policies in regard to their prevention and management. We believe that this lack of expert dermatologic advice in forward areas resulted in a considerable loss of man power which could have been salvaged, particularly in the Pacific theaters.

This variable situation may be contrasted with that obtaining in the British army, in which, in the early phases of the war, a position of consulting dermatologist was established in the war office and was held with distinction throughout the war by Brigadier R. M. B. MacKenna. In each command in the United Kingdom, the position of command consultant in dermatology was created and was ordinarily held by a competent specialist who was assigned to a dermatologic service in a large general hospital, and who regularly made visits to units within the area of his command. This system was adopted throughout the British army, and in most of the overseas armies a person competent in dermatology acted as adviser to the director of medical services of the army or command concerned.

Obviously, the extent to which such a policy should be carried out will vary according to the troop strength in a particular command, the available supply of medical officers and the incidence of dermatologic disease. This last factor varies greatly, according to the climatic and hygienic conditions under which troops are living. It is our opinion that in any military organization greater than 100,000 troop strength, the surgeon in charge should have an adviser in dermatology, who may be assigned to a hospital but who should be called on for advice regarding the general over-all policies relating to cutaneous diseases in the command and who should visit units at intervals to determine the incidence of dermatologic disease and to be of assistance to the unit medical officers. In larger bodies of troops, certainly in groups of army size, a dermatologist should be assigned full time to headquarters. As is the case with any medical officer, he may be assigned other duties, but these should not be of a scope which would prevent his knowing what the chief dermatologic problems in the command are and how well they are being met in terms of professional ability of medical officers, supply of drugs and special hospital facilities. It is believed that an enormous saving of man-days lost can be accomplished in this way, certainly more of a saving than can be made by the dermatologist concerned in any other utilization of his time and ability.

Another problem of administration which arose during the past war was the extent to which certain types of medical and surgical cases should be centralized in special hospitals. Here again, it is obvious that many conditions, particularly the length of lines of communication and the availability of transportation, may exercise a controlling influence on the feasibility of care in designated dermatologic centers. In the European Theater of Operations, certain hospitals were designated as special facilities for the treatment of dermatologic patients in most of the hospital centers and base sections. The facility with which patients were transferred depended to a great extent on the cooperation of the commanding officers concerned, but the eventual widespread acceptance of this principle left no question that it is the advisable procedure wherever possible. It is most spectacular in its benefits in the case of serious injuries requiring a high degree of technical ability and special facilities for their care, such as penetrating wounds of the brain, but its advantages are decided in many dermatologic diseases. A patient who is on a small dermatologic service, under the care of a physician with no particular competence in dermatology, is as likely to be made worse by his treatment as better and is usually more dependent on the benign environment of a hospital and the ministrations of time for improvement than on the treatment which may be selected.

Early in 1944 it was decided that specified general hospitals in the United States would be designated as centers for the various specialties, such as ophthalmology, orthopedic surgery, neurosurgery, internal medicine, general surgery and other special fields. Centers for dermatology were not included, but it was specified that patients with cutaneous diseases be sent to one of the thirty-two internal medicine centers. This policy was a feasible one except for the fact that there were not sufficient fully qualified dermatologists available in the Zone of the Interior to staff thirty-two departments. Furthermore, there was no method of regulating the number of dermatologic patients at any given hospital. Late in the summer of 1944, it was specified that patients with diseases of the skin acquired in tropical overseas theaters be sent to one of the two tropical disease centers which were established. The concentration of patients with cutaneous diseases from tropical overseas theaters at two hospitals resulted in extremely large dermatology sections which could not be staffed adequately. Therefore in June 1945, just before the end of the war, dermatology centers were established in eight general hospitals, and, for the first time, patients with cutaneous disease evacuated from overseas were coded as such and sent to one of these centers. In retrospect, it is our opinion that early in the war dermatology centers should have been established in about twelve geographically located general hospitals, with provision for adequate staff, specialized treatment and laboratory facilities and close correlation with internal medicine.

A factor of great importance in dermatology as well as in other branches of medicine during the war was the facility with which information on technical matters was transmitted. It would seem a simple procedure to classify such material properly as to its confidential nature and send it through proper channels for the information of the authority concerned. It was nothing of the sort. Commanding generals of theaters of operation may dispatch or withhold information as they please, within certain limits, and they or their deputies were often preemptory and unreasonable in their rulings on the transmissibility of certain technical information. In part, at least, physicians were responsible for this attitude, because of their inclusion in technical data of material which was primarily a function of command. Eventually the situation became clarified, and it was possible to transmit information on new diseases and their methods of treatment easily through technical medical data reports and direct technical channels. Before this was accomplished, however, the enormous value of prompt dissemination of information was realized more keenly than ever by medical officers overseas. In connection with this matter, it may be pointed out that delays in dissemination of information for the better care of patients are not peculiar to military organizations; civilian medical journals are often far from satisfactory in this regard.

RELATION OF DERMATOLOGY AND VENEREOLOGY

The prevention and treatment of venereal diseases in the Army were under the direction of the Division of Preventive Medicine and the Medical Consultants Division. It was well done; the advice of the National Research Council in the improvement of methods of treatment of gonorrhea, syphilis and other venereal diseases was adopted, and improvements in treatment were rapidly incorporated into Army practice. The introduction of penicillin therapy resulted in a phenomenal decrease in man-days lost by reason of venereal disease.

Since dermatologists have ordinarily had more experience in the early diagnosis of syphilis and of ulcerative lesions of the genitalia than any other single group in medicine, it was inevitable that many large venereal disease services were placed in charge of dermatologists. The chief of the Venereal Disease Section of the Division of Preventive Medicine of the Office of the Surgeon General during the last two years of the war was a dermatologist (Dr. Thomas H. Sternberg). The consultant in dermatology in the European Theater was responsible for the policies of treatment of all venereal disease, including gonorrhea. Many physicians without previous experience became relatively proficient in the diagnosis of venereal disease. It is our opinion, however, that proficiency in the diagnosis of ulcerative lesions of the anogenital region is not something which can be acquired by a short course of training. Accuracy in diagnosis is acquired only by prolonged experience under

close supervision, and dermatologists trained in some graduate centers, though not all, were ordinarily efficient in the management of large numbers of patients with early venereal disease.

The widespread employment of dermatologists in venereal disease clinics was worth while from the military standpoint, but we are not convinced that it is advantageous in civilian life. Certainly it was often a waste of medical talent to place highly qualified specialists in positions in which they were called on to do a large amount of work on the prevention of venereal disease. Many of the methods of prevention of venereal disease are, in our opinion, of doubtful, or at least not demonstrable, value and require little technical knowledge for their prosecution. The basic problem of control of venereal disease is dependent on factors far beyond the scope of condoms, V packets, suppression of or cooperation with houses of prostitution, management of prophylactic stations and lectures on sex.

The field of syphilis is one which inevitably enlists the interest of specialists of many different types. A knowledge of dermatology must include a thorough knowledge and proficiency in the methods of diagnosis of the ulcerative and cutaneous lesions of syphilis, and many dermatologists will retain an interest in all phases of syphilis. Nevertheless, the management of large clinics for treatment of syphilis involves a great expenditure of time and effort, and it is our belief that this frequently results in too little effort in the study of difficult clinical and investigative problems of the skin. The study of methods of treatment of syphilis is now being prosecuted on a long term national scale, with adequate funds. It is certain that nothing resembling this in terms of organization and effort is being devoted to dermatology, and it is our opinion that this inequality will be made up only by the efforts of physicians interested in dermatology in presenting the problems clearly, in obtaining support for their solution and in prosecuting investigative work which will earn the respect of medicine as a whole.

In the British army, dermatology and venereology have been entirely dissociated. With proper centralization of patients, this results in no increase in the physicians necessary. One of us had an opportunity to observe this system in detail and came to the conclusion that there is much to recommend it. As they have in the past, some dermatologists will continue to contribute brilliantly to the field of syphilology, but we are by no means convinced that continuance of a primary interest in syphilis for all dermatologists is advantageous for progress in the better understanding of diseases of the skin.

CHIEF ADVANCES IN DERMATOLOGIC DIAGNOSIS AND TREATMENT OCCURRING DURING THE WAR

Unusual syndromes which occurred with considerable frequency included the following conditions: 1. Drug eruption due to quinacrine

hydrochloride occurred frequently, the cutaneous lesions of which were lichenoid and eczematoid patches of characteristic type, with exacerbations of generalized exfoliative dermatitis in some patients and, rarely, aplastic anemia and hepatitis. Reports describing this disease and its probable causation were first submitted to the Surgeon General from the Southwest Pacific Theater by Schmitt [2] and Nisbet.[3] Later, worldwide Army experience made it evident that this disease occurred only in overseas areas where quinacrine hydrochloride was used for the suppressive treatment of malaria, and it was established by many observers that essentially it is a drug eruption caused by quinacrine hydrochloride, although it is probable that climatic and geographic factors are contributing factors, because the incidence was much greater in New Guinea and adjacent islands and in Assam. It has been referred to as atypical lichen planus, lichenoid and eczematoid dermatitis syndrome and quinacrine hydrochloride dermatitis complex. Some observers have not included in the syndrome the eczematoid lesions not accompanied with lichenoid lesions. It is our opinion that this syndrome is a characteristic drug eruption essentially due to quinacrine hydrochloride and manifested by (1) a combination of lichenoid and eczematoid lesions, (2) lesions not accompanied with eczematoid lesions and (3) a particular type of eczematoid dermatitis which is symmetric and with a predilection for the hands and feet which can be usually distinguished from other types of eczematous eruptions by experienced observers. It seems preferable to include all these manifestations in one group and refer to it as quinacrine hydrochloride dermatitis. Accurate figures on incidence are not available. It is probable that at least 1 per cent of all persons in hot, humid, tropical overseas areas who took quinacrine hydrochloride in suppressive dosage over a period of at least six months acquired some type of cutaneous reaction. A small number of these patients have permanent hypersensitization and/or atrophy, and in some instances the eczematoid lesions persist or recur for long periods.

2. Diphtheria of the skin occurred particularly in the Pacific and China-Burma theaters and was responsible for much disability and some deaths. Essentially, cutaneous diphtheria is a tropical disease and one that occurred in epidemic form only in persons who were under combat conditions, with all that this implies in regard to poor personal hygiene, cutaneous injury and close personal contact. For the most part, it is an ulcerative process on the skin, characterized by

2. Schmitt, C. L.; Alpins, O., and Chambers, G.: Clinical Investigation of a New Cutaneous Entity, Arch. Dermat. & Syph. **52**:226-238 (Oct.) 1945.

3. Nisbet, T. W.: A New Cutaneous Syndrome Occurring in New Guinea and Adjacent Islands: Preliminary Report, Arch. Dermat. & Syph. **52**:221-225 (Oct.) 1945.

ulcerative lesions covered either with a grayish, yellowish or brownish gray membrane or with a black or brownish adherent leathery slough, which separates after variable periods, resulting in sharply punched-out indolent ulcers which heal slowly, leaving thin atrophic scars, which frequently break down spontaneously or on slight trauma. In a few cases the disease occurred on an indolent eczematous plaque which was difficult to distinguish from other eczematous lesions. The management of cutaneous diphtheria is in every respect similar to that of faucial diphtheria, namely, early diagnosis, isolation, early administration of diphtheria antitoxin and observation for cardiac and neuritic complications. The predilection of Corynebacterium diphtheriae for the skin under hot, humid, tropical climatic conditions is most interesting, and an adequate explanation for this curious phenomenon might shed light on the occurrence and course of other bacterial infections of the skin under different climatic conditions.

3. Scabies and its sequelae were frequently seen. Medical officers in the European Theater cared for large numbers of patients with scabies, a disease which was endemic in the British Isles and in France during the war. In connection with this disease, the deficiencies of the American medical educational situation in respect to dermatology were strikingly apparent; most medical officers had no concept whatever of the chief diagnostic features of scabies, and little knowledge of its treatment. The disease was under intensive study in the United Kingdom during the war, and the results of these studies, particularly that by Mellanby,[4] were of great value in meeting the situation.

4. Better understanding was gained of the variety of effects which a warm climate and excessive sweating may have on the human skin.

5. There were many additions to the wide variety of substances capable of producing contact dermatitis.

Among the most valuable advances in prevention and treatment may be listed the following ones:

1. DDT was introduced, by means of which pediculosis corporis became almost nonexistent in soldiers. This compound was also of great value in the treatment of pediculosis pubis, which had previously been responsible for a considerable amount of disability because of improper, irritating methods of treatment. The effect of DDT on fleas and some other parasites was only moderately satisfactory.

2. Penicillin was introduced in the treatment of pyogenic dermatoses. In the Army, as elsewhere, this produced extremely rapid cures of many pyogenic infections which had resisted other methods of treatment. It soon became evident, however, that this method of

4. Mellanby, K.: Transmission of Scabies, Brit. M. J. **2**:405-406 (Sept. 20) 1941; Scabies, New York, Oxford University Press, 1942.

treatment had shortcomings and that its local use was accompanied with a considerable incidence of contact sensitivity reactions.

3. Use of nonirritating higher fatty acids was more widespread in the prevention and treatment of superficial fungous infections. The limitations of such compounds have not yet been entirely established. However, they undoubtedly constitute a significant advance in that they afford a reasonably effective, nonirritating method of treatment. The importance of individual hygiene of the feet and the inefficiency of prophylactic baths of the feet in the prevention of fungous infections of the feet became evident. The use of prophylactic baths of the feet has been discontinued in the Army. In particular, the work of Dr. J. Gardner Hopkins and his associates established certain facts in regard to the incidence, prevention and treatment of superficial fungous infections which made it possible for the Medical Department to adopt a more rational approach to the control of this group of diseases.

4. Resin of podophyllum was introduced in the treatment of venereal warts. This is superior to any other method, in our experience.

5. In syphilology, the introduction of penicillin therapy into Army practice was important. This was first used on a large scale in the European Theater, starting June 26, 1944. It is doubtful that the demands of war in combat areas would have permitted anything approaching adequate treatment of syphilis by any other method.

6. Benzyl benzoate therapy for scabies was introduced. This method of treatment, though not without certain shortcomings, was superior to sulfur therapy for outpatient treatment.

GAPS IN KNOWLEDGE WHICH LED TO INCREASED DERMATOLOGIC DISABILITY

The urgent demands of conditions obtaining in combat zones sharply emphasized certain deficiencies in the available methods of dermatologic therapy. At times, the shortage of hospital beds became acute. Also, the allowable period for treatment of patients in the combat area was brief at times, and this often brought the inefficiency of treatments for some cutaneous disease to administrative attention.

The unsolved problems in dermatologic therapy which were most obvious were as follows:

1. Means of controlling chronic pyogenic or fungous infections and of reducing a patient's sensitivity to the bacteria and fungi which become an almost irremovable part of his skin flora were inadequate. We believe that cutaneous pyogenic infections are far more important causes of chronic disabling diseases of the skin than are superficial fungous infections.

2. Methods of controlling itching were inadequate. Why should there not be an antipruritic agent as satisfactory, for instance, as hypnotic agents for the control of insomnia?

3. There was a lack of knowledge concerning chronic eczematous eruptions of the hands and feet, and the relative slowness and inefficiency of methods of dealing with them presented problems.

4. Physicians lacked means of controlling excessive perspiration and methods of protecting the skin from its deleterious effects.

5. Methods of preventing the harmful effects of prolonged residence in tropical climates on the skin were inadequate.

6. There was a lack of any simple certain method of protecting the skin against contact dermatitis from plants and other contactants.

7. There was a relative lack of satisfactory methods of controlling acute noninfectious inflammatory reactions of the skin rapidly and safely.

8. Methods of treating warts, especially plantar warts, were cumbersome and unsatisfactory.

9. Methods of dealing with chronic allergic states involving the skin, especially in persons whose environment and diet could not be adjusted to their particular sensitivities, were slow and unsatisfactory.

10. There was a relative lack of scientific approaches to the study and management of psychosomatic states in chronic dermatoses.

11. Methods of treatment of severe acne were slow and tedious.

12. The intractibility of psoriasis, which almost always became worse in an overseas environment, presented a problem.

13. There was a relative lack of knowledge of the basic factors in seborrheic dermatitis, which also frequently became severer in men overseas.

CONCLUSION

It is believed that the experiences of the war emphasized to many physicians that dermatoses are an important source of disability and that their knowledge of dermatology was often inadequate. It is believed, also, that a considerable number of physicians were impressed by the efficiency of certain specialized methods of treatment, especially when based on sound scientific grounds. Also, dermatologists with an adequate knowledge of internal medicine were more successful in treatment than those with a purely "externist" approach. With these considerations in mind, it is our opinion that the following approaches to better care of the dermatologic patient are of great importance.

1. More adequate time must be devoted to the teaching of dermatology in medical schools. Better pedagogic methods must be employed, with greater emphasis on the recognition and management

of the common dermatoses and of the dermatoses of general medical significance.

2. It is believed that the advisability of complete separation of dermatology and syphilology in larger medical centers should be considered.

3. Graduate students should be encouraged along lines of basic laboratory studies in the physiology of the skin and of the relation of disturbances of general body metabolism to changes in the skin.

4. The interest of investigators in the basic sciences in the problems of clinical dermatology must be stimulated and active cooperation given to them by clinicians.

5. More private and state funds must be enlisted in the adequate support of numerous problems in dermatology which are of great importance in the efficiency and well-being of a considerable segment of the population.

6. It is felt that the externist approach in dermatology is dangerous and inefficient and that graduate training in dermatology should include adequate experience in internal medicine, with close cooperation between departments of internal medicine and of dermatology. The knowledge of many well trained internists is often strikingly deficient in regard to diseases of the skin, and the specialty training of internists would be improved by instruction in the rudiments of dermatology.

DISCUSSION

Dr. Marion B. Sulzberger, New York: I am not the only member of the Navy Medical Corps who is here, nor am I the official spokesman for the Navy Medical Corps, but I should like to say one word in emphatic endorsement of every comma and every inflection of what Dr. Pillsbury and Dr. Livingood have just presented. I do not know a single important point at which the naval experience differs from theirs. Certainly my personal observations do not differ from theirs, nor would my conclusions differ from those they have drawn. The figures given for the Army coincide almost to the third decimal place with those which the Navy compiled regarding the incidence of cutaneous diseases in various theaters and which have been repeatedly published and emphasized, and the reaction of the average nondermatologic naval medical officer to the tremendous problems of the recognition and management of cutaneous disease was identical with the reaction which is here described on the part of the Army medical officers.

The one fact which I would like to express most strongly is that the authentic and lively interest which has been aroused by this high incidence of cutaneous diseases and by the recognition of their ignorance on the part of the medical officers who were for the first time brought face to face with these cutaneous diseases really affords a golden opportunity for development of dermatology. If facilities for teaching can be expanded both in undergraduate and in postgraduate medical schools and if the situation can be brought to its deserved public attention, so that the general medical and public interest will keep pace and reach the same level as it has attained in these young medical officers, there are both the chance and the obligation to train more and better men in this specialty than was ever possible before.

I should like to say a word with regard to the plans of Admiral McIntire, Admiral Harper and Captain Newhouser for the Navy's postgraduate education in dermatology. The plan is now pretty well ripe, and at this point it may be described as follows: Outstanding reserve officers of the Navy are serving on a consultants board, one representative of each major specialty, and on this board dermatology is included. This board has the task of organizing, directing and being a recommending body to the Surgeon General regarding postgraduate medical education for medical officers of the regular Navy. The plan for dermatology is to have a certain number of medical officers of the regular Navy assigned each year to civilian institutions recognized by the American board for training—full time training—in dermatology and syphilology. That training will be supplemented by residency type training in fully equipped and staffed dermatologic centers which are being established at present at Naval hospitals and which we hope will meet the requirements of the board of certification.

One such center has been tentatively approved at Philadelphia, as Dr. Lewis and Dr. Gilman and others here know. A second one now is being organized and will apply for approval at St. Albans, N. Y. It is contemplated that more dermatologic centers will be established, particularly on the west coast, as time goes on. The present plan is, therefore, to give regular Naval medical officers the best available training both outside and inside the Naval hospitals and thus try to develop them into teachers, so that the deficit which the Navy now feels in its lack of medical officers certified in dermatology will be filled as expeditiously, adequately and uninterruptedly as possible.

DR. HAROLD N. COLE, Cleveland: I recently received a copy of the Rockefeller Foundation report; I read it over with a great deal of interest and immediately sat down and wrote Allen Gregg and told him that I noted appropriations for this and appropriations for that and that, as usual, there was nothing done for dermatology in this country. Then I mentioned the experience of my own hospital unit, University Hospital Unit 4, which was the first one out of the country and which was sent down to Australia.

Fortunately, my colleagues and I had gotten in a provision in this unit that one of our men was in the unit as a dermatologist, and Dr. Frank McDonald has told me his experiences. He went down to Australia. They had anywhere from 10 to 20 per cent of the complete bed capacity devoted to dermatology. After they had been down there a while, a unit from another large university—a celebrated university in this country—was sent down to that same island. It did not have a dermatologist, and after it had been there a while some of the men came over to University Hospital Unit 4 and asked whether it would not be possible for one of them to come over there two or three times a week and make the rounds because they were getting nowhere in the care of their patients and it did not look as if they would be able to get a man down there to take care of this material.

Then the hospital unit was sent up to New Guinea. A large part of this hospital was supposed to be devoted to surgery. Most of the time that this unit was in New Guinea, 20 to 40 per cent of the one thousand beds were devoted to patients with dermatologic disease. That indicates exactly what Dr. Pillsbury has brought out.

It is unfortunate that more prominence is not given to dermatology in medical schools. It takes a great war to bring out its importance. It was true in World War I, and particularly so in the war just finished.

I think that dermatologists owe a great deal to Dr. Sulzberger for the way the Navy handled the problem. He was able to get in early and establish a correct

recognition of the specialty's importance. Moreover, I hate to think what would have happened in the Army medical service in the European Theater so far as dermatology is concerned if it had not been for Donald Pillsbury.

Dr. C. Guy Lane, Boston: I have naturally been much interested in this paper, and, as a representative of World War I, I am willing to confirm all that Dr. Pillsbury has said about this war, especially that dermatology is of significance because of the disability caused by dermatologic disturbances. To prove that to some of the medical officers who were assigned to Massachusetts General Hospital in the early part of the war, I drew up two tables. One of them shows the number of cases of cutaneous disease in the last war, as obtained from the statistics of the Surgeon General's Office. It is hard to believe that these figures show all the cases. It would seem that there were more than 126,000 cases of cutaneous disease. If one looks at the number of patients with dermatitis on the chart, one sees only 5,000 patients hospitalized; there must have been more than that. Take the cases of fungous infections; there must have been more than are itemized here. The other slide shows the number of days' disability, and these are simply those concerned with patients admitted to hospitals. Of course, scabies and cutaneous infections present the larger figures, as they do today. These figures, together with the figures from this war, are a forceful argument for better training in this field of medicine.

Secondly, he called attention to the mismanagement of ailments of the skin as a factor in the cause of disability in the Army. Dermatologists are all seeing that in clinics and in practice every single day.

He also called attention to the lack of knowledge, or perhaps it is a failure to use the knowledge which they have. I think that all the dermatologists who are conducting examinations for the American Board of Dermatology and Syphilology will bear that out. It has certainly been discouraging to me at times, in quizzing students with regard to the fifteen or twenty common diseases, to find their extreme lack of knowledge with regard to characteristics, differential diagnosis and therapy.

He spoke of the lack of even minimal training in dermatology among medical officers. This has been of considerable concern to me personally, because Harvard Medical School allows me only five lectures a year to cover the whole field of cutaneous disease and allows ten or eleven two hour periods in the clinic for small sections.

Then he spoke about the matter of specialists in other fields not having instruction in dermatology. That is true. There is too little contact in general with other fields, especially internal medicine.

These five items, it seems to me, represent five indictments of dermatology in general, and something ought to be done about it. I suggest that a survey be made by a committee on education, to be appointed by the American Dermatological Association, or perhaps by a joint committee of the American Dermatological Association and the American Academy of Dermatology and Syphilology. Such a committee should survey dermatologic teaching throughout the country and review methods of teaching. Perhaps it can develop some standards of adequate graduate instruction and provide the various chiefs of dermatologic departments with material for use as arguments to procure more adequate teaching in this specialty. Such a committee would have an even larger field in the consideration of graduate courses in dermatology for general physicians and perhaps even the matter of education of the laity in dermatologic matters. We are all so much interested in the scientific aspects of clinical and laboratory dermatology that we are apt to pay little attention to these relationships, but in

this period of change it is time to give some thought to our public relations with medical schools, with physicians in other fields and perhaps even with nonmedical persons.

DR. C. F. LEHMANN, San Antonio, Texas: It is certainly an appropriate time to bring this subject up. I know of the many difficulties that Dr. Pillsbury has had, and I am surprised that he can stand here with the composure that he manifested and give us such an unbiased, unexcitable sort of discussion of the problems that he encountered.

I certainly endorse everything he said about training and giving more attention to dermatology in our medical schools. I think, however, that a great deal of blame should be put on the Army for not recognizing the importance of this. The lessons were learned in the other war. I am one of those who at the outset of this war volunteered early and went in a general hospital—one of the largest—in which dermatology was a part of urology. This sorry state of affairs was corrected as quickly as possible, and the Army had some excellent men in it who saw the need; however, owing to the huge task of building up far greater problems in dermatology and the cumbersome methods that were used, the evils were not corrected, but now is the time to correct those evils for the next war.

I think that the solving of these problems that have been brought out will depend more on the establishment by the Army of dermatologic centers and training centers for the Army in which not only dermatologists but technicians, nursing force and other specialists are trained. Dr. Pillsbury did not tell you of the difficulties that I am sure he has had (because I have seen it) with the rapid shifting of personnel—trained personnel, trained to carry out a specific task and for some reason or other transferred rapidly. Any one who has had any Army experience knows how that disintegrates a well established force, and in medicine it cannot be mechanized as it can in the artillery or the infantry.

Another evil that will be seen—a costly evil—from this sore lack of the proper culling, the proper handling of dermatologic cases, is the tremendous amount of claims in the Veterans Bureau, claims of aggravation while in service of diseases that existed prior to service. I am sure that all of the members are going to have to assume some responsibility as being watchdogs for the Treasury.

DR. GEORGE M. LEWIS, New York: I should like to ask Dr. Pillsbury if, in closing, he would develop the thesis that he mentioned in regard to separation of syphilis from dermatology. This is a question that is being considered in certain quarters, and I think that at this time we should be interested to have him elaborate just a little on his recommendation.

DR. DONALD M. PILLSBURY, Philadelphia: There is a disposition on the part of the Army, Navy and the Public Health Service to train some of their career medical officers in the specialities. I should like to speak for the cooperation of all training centers of dermatology in aiding such a program.

In regard to the remarks of Dr. Cole and Dr. Lane about general hospitals going overseas without any attempt to include a person trained in dermatology among their personnel, I am certain that all such hospitals now recognize that this was a mistake. I have discussed this with a number of medical chiefs of such hospitals, and they stated frankly that they had never realized the amount of hospitalization which could result from some of the simple dermatologic diseases. Such hospitals, however, often furnished an enjoyable day for a visiting consultant. I recall one unit, an excellent one from a well known medical center, which had no one in it with any real experience in dermatology. Patients with various cutaneous diseases were scattered throughout many wards, and the standard

of dermatologic misdiagnosis was remarkable to behold. Among the group of extremely keen medical officers attached to this unit, I dare say that there was hardly one who could pass the examination in dermatology given to junior students. In the medical school which they had attended, dermatology had been deemphasized almost to the point of extinction.

Dr. Lehmann mentioned a problem which will arise in connection with the care of veterans. Like many other returned medical officers, I am much interested in this and am sure of the desire of every one concerned to help in whatever way possible. The reorganization of the Medical Department of the Veterans Administration now in progress gives hope of an eventual high standard of professional care to veterans. Dermatology and syphilology is represented by a consultant in each of the thirteen branch sections, and it is hoped that an adequate service in this specialty will be available in all the general hospitals. There is great need, from the standpoint of better professional care to the veteran, for the establishment of approved residencies in dermatology in some of the larger Veterans Administration hospitals. In the hospitals being staffed under the direction of the various dean's committees, there is no reason why this should not be accomplished in many places in the near future. Adequate liaison with the various speciality boards is being established, and it is hoped that certification of training centers which deserve approval will be rapidly accomplished.

Dr. Lewis has requested that I develop the thesis of the advisability of separating dermatology and syphilology a little further. In mentioning it before this group, I feel somewhat like a prodigal son who has come home and suggested that a part of the family plantation be sold. I have no doubt that many dermatologists will, as they have in the past, continue to be interested in all phases of syphilis and to participate effectively in the evaluation of the best methods of treatment of the disease. It is perfectly obvious that any competent dermatologist must be entirely familiar with the mucocutaneous lesions of early and late syphilis and with all the methods of diagnosis of the disease, both laboratory and clinical. However, I believe that in many departments of dermatology and syphilology, particularly those operating with limited personnel, a disproportionate amount of time and energy is spent on the running of routine clinics for syphilis, to the detriment of adequate study of patients with dermatologic problems. It is my own feeling that the problems relating to disturbance of the skin are so many and so varied as to demand much more attention than they have hitherto received in this country. The long term studies designed to determine the best method of treating syphilis, being carried out under the auspices of the National Institute of Health, are splendidly organized and are well supported financially. Compared with this study and the study of diseases such as tuberculosis and infantile paralysis, the support available for studies designed to reduce disability in the population resulting from cutaneous diseases is pitifully inadequate.

MOELLER'S GLOSSITIS

A Case with Remission During Pregnancy

HERBERT RATTNER, M.D.
CHICAGO

DURING the meeting of the American Dermatological Association in Chicago in 1944, I presented at the clinical session a patient of mine with lesions on the tongue which were so unusual in character that a precise classification could not be made. The clinical picture suggested several diagnoses: aphthous stomatitis, drug sensitization, factitious glossitis and Moeller's glossitis.

REPORT OF A CASE

The patient, a young married woman aged 23 years, complained of burning, painful areas on her tongue. These lesions were first noticed five years previously, and they had been present continuously since then except during the period when she was pregnant in 1941. Her tongue was free of symptoms for the entire nine months' course of her pregnancy. Aside from this remission the symptoms were present constantly, but the intensity of the pain and burning sensations would vary in degree from time to time. The acute phases seemed to occur in cycles of approximately three weeks, beginning about one week prior to the onset of a menstrual period, increasing in severity for some ten days and then subsiding somewhat one week after the menses. Throughout the acute stages her tongue would become so sensitive that the process of eating was a chore. Hot and spicy foods were especially aggravating, and even bland foods caused some distress. The mere act of talking was so painful that a naturally agile tongue was slowed down considerably. The patient noticed no unusual change in her weight, and there were no other evidences of harmful effects on her general health. There was no interference with sleep, and, surprisingly enough, in view of the constant discomfort in her tongue, there was no adverse effect on her disposition. The patient was a rather pleasant, placid person, who understood and cooperated intelligently with all efforts to solve her problem, and there was nothing in her manner or reactions that suggested that she was neurotic.

An examination of the tongue revealed that there were several sharply defined areas on the dorsum and sides that were exceedingly tender. Some of the lesions were paler than normal tissue; others were beefy red. They were all eroded, with shiny glazed surfaces that appeared to be swollen. The lesions were small (dime sized) and for the most part regular in shape, either rounded or oval. A few, however, had irregular shapes, with a tendency toward the bizarre, i. e., with sharply pointed angular borders or with stripes. The color of the lesions varied at times, changing from pale pink to a deep red, but they retained their

From the Department of Dermatology, Northwestern University Medical School, Edward A. Oliver, chairman.

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individual shapes for practically the entire period that the patient was under observation. During the periods of quiescence some of the lesions healed to the point that they could not be distinguished readily from neighboring normal areas. Usually the areas between the lesions seemed normal in appearance except during one acute phase when the entire tongue became swollen and red.

There was never any ulceration, bleeding or discharge from the lesions. The buccal mucous membranes and gingivae appeared healthy, and the teeth were in good condition. There was no regional adenopathy.

The general physical examination revealed normal findings except for a small erosion on the cervix. The hemogram, which was studied on numerous occasions over a period of six years, was always normal. Repeatedly the results of urinalysis were normal, and the serologic tests of the blood elicited negative reactions. The metabolic rate ranged at times from minus 2 per cent to plus 11 per cent. The studies of the blood chemistry showed normal amounts of proteins, albumin, globulin, cholesterol, calcium and phosphatase. The gastric analysis showed normal amounts of free hydrochloric acid and total acid. On examination, the feces were found to be free of tapeworm segments or ova. Allergy studies were made by means of percutaneous tests and diet elimination but contributed no pertinent information. The eosinophil count was normal. A thorough study by a psychiatrist revealed no findings to warrant a diagnosis of hysteria or self-induced lesions. There was no evident endocrinopathy; the department of stomatology and oral surgery had no suggestions to make with regard to further studies.

Histologic studies of sections of the tongue by Dr. Evangeline E. Stenhouse revealed changes indicative of superficial glossitis, acute and subacute in nature:

"Center of Tongue.—The epidermis is atrophic and shows only rudimentary papillae and interpapillary processes. There is a thickened, horny layer comprising about one half the thickness of the epithelium. There is a granular layer about 2 to 3 cells in thickness. The basal portion consists of cuboidal cells not arranged definitely in palisades. The tunica propria is involved in its entire thickness in subacute and chronic inflammation. There are many new-formed capillaries with swollen endothelium. In places there are a good many plasma cells. Beneath the tunica propria the superficial muscle fibers are involved in mild inflammation, and some of them have undergone hyaline degeneration.

"Left Side of Tongue; Eroded Area.—The section shows no epithelial covering. The superficial portion is composed of a fibrinous material containing round cells and polymorphonuclear cells. The entire tunica propria is involved in acute and subacute inflammatory change, with many polymorphonuclear cells in superficial blood vessels, the endothelial lining of which is swollen. The superficial muscle fibers are also involved, with hyaline change in a few of the fibers."

The patient received as treatment from various physicians large doses of mixed vitamins, cod liver oil, dried yeast, dilute hydrochloric acid, atropine and alpha-estradiol benzote (in sesame oil). Estrogenic substances were applied to the tongue and administered by mouth and parenterally. At one time 10,000 units of estrone in oil was administered five times weekly for two weeks, with the thought that such a dosage might produce bleeding from the tongue in the event that it contained aberrant endometrial tissue. Soothing preparations were prescribed for topical application to the tongue. With these measures the tongue would improve for a time, both subjectively and objectively, but there was never complete healing and new lesions would continue to make their appearance. Unfortunately, she was not treated with anhydrohydroxyprogesterone or corpus luteum substance. At the time of this writing the patient is again pregnant, and again, for the second time in a period of six years, the lesions and subjective symptoms have disappeared.

When this case was presented at the Chicago meeting Moeller's glossitis was the diagnosis favored by most of the members who discussed it, but the question was raised as to its nosologic position. Moeller's glossitis is a disease which seems to occupy an uncertain nosologic position. The literature on the subject is small (less than 100 cases have been recorded), and there are but few important papers on the subject. Dermatologic textbooks give it some attention; the literature of otolaryngology disregards it, and among the books on stomatology only that by Prinz and Greenbaum [1] gives it serious consideration. The subject has received most attention from German physicians, who consider it to be a definite clinical entity associated with pernicious anemia, but it receives only scant mention in the literature of hematology and internal medicine.

Moeller in 1851, under the title "Chronic Superficial Excoriations of the Tongue," was first to describe the disease, and his clinical description leaves little to be added:

> . . . irregular, usually sharply defined vivid red spots from which the epithelium is missing or has become thinned. The papillae appear hyperemic and swollen and are elevated above the level of the normal mucous membrane. The areas are not covered with a pathological discharge, they are not transformed into ulcerations, nor do they have a tendency to spread. They are persistent, retaining their original size and form in spite of all forms of treatments. The lesions occur usually on the tip and margins of the tongue and sometimes the undersurface and inside of the lips. The excoriations cause a very annoying burning sensation giving a distaste for even the mildest of foods, although the appetite does not suffer. The sense of taste is dulled and sometimes the articulatory movements of the tongue cause pain.

Moeller reported and described 6 cases with similar symptoms in all of which the patients were women of middle age who had been troubled with the disease for many months.

Moeller's paper apparently aroused little attention in medical circles, for no further reports appeared in the literature until 1890—forty years later—when Michaelson reported 3 cases, 1 of them the case of a man, the first reported. Several scattered reports appeared thereafter in the German literature, none of which added materially to Moeller's original report except to increase the number of cases on record. The French and English ignored the disease, the French apparently confusing it with geographic tongue, "one form of which is accompanied with considerable subjective sensations while the edges are missing" (Bernard).[2] In 1909 the authoritative William Hunter contended that an early and invariable symptom of pernicious anemia was soreness of the tongue from glossitis. He described superficial ulcerations as more or less

1. Prinz, H., and Greenbaum, S. S.: Diseases of the Mouth and Their Treatment, ed. 2, Philadelphia, Lea & Febiger, 1939.

2. Heyn, W.: Moeller's Glossitis, Hunter's Tongue and Pernicious Anemia, Dermat. Ztschr. **47**:132, 1926.

regular occurrences, but otherwise his description of the lesions was essentially similar to that of Moeller's glossitis, "fiery red patches, pain on eating, chronicity, periodicity and absent epithelium." Hunter focused attention on the connection of sore tongue with pernicious anemia, and the term "Hunter's glossitis" appeared for many years in the English and American literature of hematology and internal medicine. It is not yet clearly settled whether Hunter's glossitis and Moeller's glossitis are essentially the same disease, but they would seem not to be, because ulcers are a conspicuous part of Hunter's glossitis and they never occur in Moeller's description of the disease. Incidentally, today both terms are virtually ignored in all but the dermatologic literature.

In this country attention was first called to the condition by Fred Harris in 1915.[3] Like all other papers on the subject, Harris' paper was of a casuistic nature, but his report of 20 cases, 2 of them from his own practice was a thorough analytic study, covering every phase of the subject. From it he concluded that Moeller's glossitis was a distinct clinical entity of unknown cause and that, while it was undoubtedly uncommon, it probably was not so rare as the number of cases reported would lead one to judge. That position after thirty years may well be supported today, for the published transactions in journals of dermatology indicate that, although patients with the disease are only occasionally presented before the various dermatologic societies, the members who discuss them frequently refer to their experiences with other similar cases.

Schäfer [4] then enlarged the clinical concept of Moeller's glossitis to include a latent form without the acute symptoms, a type in which there is burning only or, after the stage of burning, a condition of smooth atrophy with or without transparent swellings. Greenbaum noted that it is difficult to differentiate the latter condition from painful geographic tongue, though in their textbook he and Prinz did give recognition to Schäfer's classification. Schäfer stressed the connection between pernicious anemia and Moeller's glossitis. In fact, he maintained that the diagnosis of Moeller's glossitis can be entertained only if, in addition to the symptoms, there are also changes of the blood as in pernicious anemia.

In a comprehensive paper, Heyn [2] in 1926 reported on 37 cases observed in the years between 1920 and 1924. His group included 30 women and 7 men, and, as in Harris' study, Heyn gave a complete and thorough exposition of the subject, with particular attention given to the cause of Moeller's glossitis. He concluded from his cases that "Moeller's glossitis together with chronic intestinal disturbances, mostly achylia,

3. Harris, F.: Chronic Superficial Excoriation of the Tongue, J. Cutan. Dis. **33**:742, 1915.

4. Schäfer, E.: A Contribution to the Knowledge of Moeller's Glossitis and Its Relation to Pernicious Anemia, Arch. f. Dermat. u. Syph. **147**:201, 1924.

may be symptoms of a number of diversified diseases, the outcome of which may be pernicious anemia. Moeller's glossitis often is a forerunner of pernicious anemia." He found pernicious anemia in 75 per cent of his cases, and in 21 per cent there were findings to warrant suspicion of pernicious anemia. He found no examples of Moeller's glossitis in patients with other types of anemia. With regard to Schäfer's classification, Heyn conceded that formes frustes probably do occur, but they cannot be recognized, for they hardly cause the patient to seek medical aid.

Zinsser,[5] as well as most of the German school of physicians, considered Moeller's glossitis to be a manifestation of pernicious anemia, but in this country the connection between Moeller's glossitis and pernicious anemia has not been noted by Harris, Fred Wise, Ormsby, Rostenberg, Cole, Engman, Stillians and others who have observed cases of the disease. In the case herein reported there is no indication of pernicious anemia. Greenbaum, however, who has studied the subject extensively, did consider it to be a manifestation of pernicious anemia.

From time to time other causative factors have been suggested. Of Moeller's 6 patients, 2 had gastroenteritis, 2 had anemia and 5 were affected with fish tapeworm, a factor to which Moeller attached significance, but his paper appeared in 1851, only two years after Addison's historic description of pernicious anemia was published and twenty years before Biermer established the concept of pernicious anemia in German medicine. The causative role of tapeworm has been mentioned in several cases either as a direct cause or as an indirect cause, for it was once thought that tapeworm caused pernicious anemia. Sturgis and Isaacs, however, dismissed this suggestion on the grounds that pernicious anemia is relatively rare in persons with tapeworm, that in such persons treatment with liver substance has effected recovery from pernicious anemia before the tapeworm was expelled and relapses of the pernicious anemia have occurred after the tapeworm had been expelled.

It has been suggested that Moeller's glossitis is a nonspecific entity that may accompany almost any type of anemia or dyscrasia, but the literature of hematology does not support that view. A reflex neurosis, particularly from gastroenteritis, was credited with causing Moeller's glossitis, but that theory, too, has been dismissed. Engman and Weiss[6] have reported a case of Moeller's glossitis which was cured after the extraction of abscessed teeth and the eradication of pyorrhea in a woman.

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5. Zinsser, F., in Jadassohn, J.: Handbuch der Haut- und Geschlechtskrankheiten, Berlin, Julius Springer, 1930, vol. 14, p. 1.

6. Engman, M.: "Burning Tongue," Arch. Dermat. & Syph. **1**:137 (Feb.) 1920.

The influence of hormonal factors on Moeller's glossitis has been suggested frequently, because most of the patients have been women, in many of whom the onset coincided with the onset of menopause. In Heyn's series "some women claimed the tongue was worse during the menstrual period . . . one patient observed a remission during menstruation."

In the case herein reported the patient was younger than those in other recorded cases. The lesions were more inflammatory and painful during the menstrual period, and there was complete remission of symptoms during two pregnancies, an observation that apparently has never before been recorded.

SYMPTOMS AND DIAGNOSIS

The most important symptom of Moeller's glossitis and the one that causes the patient to seek medical aid is the intense burning pain of the tongue. The burning might begin suddenly, in which case the patient usually associates it with some specific occurrence, as a nervous shock, dentistry or a gastric upset, but usually the onset is gradual. The early writers stressed the constancy and severity of the pain and described it as being aggravated by highly seasoned foods and to the extent that each intake of food was a torture. Yet there seems to be no complaint of loss of appetite though the sense of taste may be dulled. As more cases were observed, it became evident that the subjective complaints might be variable, some patients describing the sensation as itching rather than burning or characterizing it as mere discomfort or insignificant. The burning sensation may sometimes radiate to the ear, or it may be present in the throat and esophagus. According to Heyn, the pain may even disappear completely for weeks or months. Nevertheless, pain is the outstanding symptom of Moeller's glossitis, and it is difficult to make a diagnosis of Moeller's glossitis unless the patient does complain of pain.

The burning sensation does not involve the entire tongue; rather it is confined to the patches of glossitis which are usually situated on the tip and lateral margins of the tongue. In a typical case the lesions are readily recognized, for they are sharply outlined and of vivid red color and their covering epithelium is so thinned that the patches at first glance appear to be excoriated. They occur usually as irregular round or oval patches, but they may be elongated or streaked with ragged or arciform borders which make them look somewhat like factitious lesions. The individual lesions may be small, the size of a lentil, but oftener they attain the size of 1 or 2 cm. Characteristically, they retain their original size and configuration, showing but little tendency to spread or coalesce. The patches are not infiltrated. The lesions feel somewhat softened or flabby and are slightly depressed rather than elevated. The papillae within the patches, however, may be hyperemic, swollen and elevated above the level of the surrounding surface, and

they may be exceedingly tender to touch. Some observers consider this papillitis to be an essential part of the picture of Moeller's glossitis.

The mucous membrane between the patches appears to be either normal or slightly edematous and shiny gray. The consistency of the tongue remains practically normal, but when the tongue is extended whitish longitudinal streaks appear on the dorsum near the base of the tongue. These streaks change their direction during movements of the tongue from side to side, and, according to Arndt, who first called attention to these changes, the streaks are probably due to increase of pressure of subsurface inflammation of the tissue and they constitute a sign of diagnostic significance, especially during stages of remission.

In Moeller's glossitis there are characteristically no ulcers, fissures, erosions or scales; there is no peeling or discharge from the lesions; the tongue is usually not coated, and no scarring results from the lesions.

DIFFERENTIAL DIAGNOSIS

Other diseases of the tongue that are characterized by patches or pain may closely simulate Moeller's glossitis. The disease which apparently causes most confusion is the entity "transitory benign plaques of the tongue" (also called wandering rash, geographic tongue, erythema migrans, exfoliative areata linguae and other names), especially the cases in which the lesions are painful. In this disease the lesions do not retain their original size or shape; they begin usually as pea-sized lesions and enlarge by peripheral extension to circular or oval rings ½ inch (1.2 cm.) wide or larger. The borders have a yellowish tint, and they are slightly raised so that the circles are visible at a distance. Neighboring lesions have a tendency to coalesce to form gyrate figures. The lesions are evanescent. Pain, tenderness and chronicity, although they may occur occasionally, are not prominent features of the disease. Thus the disease can be readily distinguished from Moeller's glossitis except on a rare occasion such as Stillians has experienced, in which a patient apparently had lesions of both Moeller's glossitis and geographic tongue.

The various lesions of syphilis, particularly the mucous patches, patchy stomatitis medicamentosa, erythema multiforme and perhaps pemphigus and epidermolysis bullosa must also be differentiated from Moeller's glossitis. Factitious lesions may sometimes simulate Moeller's glossitis. Feigned eruptions are exceedingly rare in the mouth. Such lesions should have bizarre shapes with streaks and angulations, and the subjective sensations of pain and burning are apt to be greatly exaggerated, particularly when the tongue is being examined by the physician. At one time or another, however, it is usually possible to distract the patient during an examination.

Mucous patches of syphilis exhibit little or no soreness. They are round or oval, flat, slightly depressed or, rarely, barely elevated above

the surrounding parts. The surface of a patch has a pale rose or gray color, and it is moistened with mucus. The mottled tongue in late syphilis or the smooth, shiny, varnish-like lesions due to syphilitic sclerosis of the deeper tissues of the tongue may also be readily distinguished from Moeller's glossitis by the presence of infiltration in the lesions and the absence of pain.

In stomatitis medicamentosa, erythema multiforme and other bullous diseases affecting the mouth, the patches are eroded and partially covered by loosely attached grayish white shreds resembling milk curds.

The various diseases that produce pain and burning of the tongue must also be distinguished from Moeller's glossitis. When pain is due to organic lesions as tuberculosis, aphthous lesions, herpes or stomatitis venenata, clinical pictures of those diseases are usually familiar and readily recognized.

More difficulty from the standpoint of differential diagnosis is presented by the conditions in which there is pain or burning but no obvious changes in the tongue, a condition which exists, according to German physicians, in Moeller's glossitis during periods of relative remission.

Such symptoms may have a psychic origin, occurring as a manifestation of hysteria or more commonly in person with cancerphobia, as Engman [6] has pointed out. Glossodynia has been noted in aphasic disorders; in peptic ulcer of the stomach; as a nervous manifestation; as a reflex irritation from malocclusion of the temporomandibular joint; in glossopharyngeal neuralgia; as a manifestation of allergy to foods, drugs, dentifrices and materials in dental plates; in arteriosclerosis of the vessels of the tongue; in patients with artificial replacements in the upper jaw; as a manifestation of lingual tonsillitis, and in pellagra, sprue and related conditions in which there is avitaminosis or dysvitaminosis. Burning tongue with or without visible stomatitis is occasionally due to galvanism from dissimilar metals in teeth. In such cases the patients usually note that the onset followed soon after dentistry was performed, and they complain not only of the burning sensation but also of a peculiar metallic or salty taste in the mouth, sometimes a dry tickling feeling in the throat and an increased amount of salivation. The symptoms are usually relieved by eating or drinking rather than aggravated as in Moeller's glossitis.

Burning and painful tongue occurs oftener as a result of anemias perhaps than from any of the aforementioned conditions. Yet there is seemingly a difference of opinion among hematologists as to the importance or frequency of glossitis in patients with anemia. Sturgis and Isaacs, who wrote the chapter on pernicious anemia in Downey's encyclopedic "Handbook of Hematology," [7] merely stated, "The common gastrointestinal symptoms [of pernicious anemia] are recurrent attacks

7. Downey H.: Handbook of Hematology, New York, Paul B. Hoeber, 1938.

of glossitis . . ." and there is no description of the tongue. Wintrobe [8] stated, "in pernicious anemia glossitis and atrophy of the tongue papillae are common." Murphy commented that in pernicious anemia "early the edges or surface of the tongue may be inflamed with a bright scarlet hue . . . later, [there is] glossitis with the smooth, shiny, rather opalescent sheen." And of idiopathic hypochromic anemia he stated that soreness of the tongue is sometimes complained of but inflammation or true glossitis, if it occurs, must be extremely rare. However, Dameshek [9] was not in agreement, for he observed that primary hypochromic anemia is always characterized by an abnormal tongue, which early is intensely red and later becomes atrophied, shiny and bald. The involvement is usually of the entire dorsum of the tongue, but at times only small areas of redness are present on the tip of the tongue. Whitby and Britton [10] also stated that in idiopathic hypochromic anemia "rarely the mouth affection may be severe, with much redness and extreme pain . . . there may be shallow ulcers. . . . The glossitis may progress to produce a smooth, red, bald tongue, . . . pale and atrophic. . . . The glazed tongue . . . is more constant in this condition than in pernicious anemia." Similar changes were attributed by McCombs [11] to deficiency of nicotinic acid, while Hutter, Middleton and Steenbock [12] pointed out that the glossitis of pregnancy, pellagra, sprue, Plummer-Vinson syndrome, malnutrition, intestinal stricture and the various anemias have one thing in common—vitamin B deficiency—and in all these diseases there occurs stomatitis.

COMMENT

There is thus a difference of opinion as to whether or not Moeller's glossitis constitutes a disease entity, whether or not it is a manifestation of pernicious anemia and whether it is characterized by a distinctive clinical picture. Sutton and Sutton,[13] for instance, considered that it falls into four classes: stomatitis venenata, stomatitis due to systemic allergy, stomatitis due to nutritional deficiency and glossodynia. European physicians, particularly the German school, have considered it to be a manifestation of pernicious anemia. Physicians in this country in general have not noted that connection, and it is significant that the literature on hematology, which has grown to voluminous proportions in recent

8. Wintrobe, M. M.: Clinical Hematology, Philadelphia, Lea & Febiger, 1942.

9. Dameshek, W.: Primary Hypochromic Anemia, J. A. M. A. **100**:540 (Feb. 25) 1933.

10. Whitby, L. E., and Britton, C. J.: Disorders of the Blood, ed. 3, Philadelphia, The Blakiston Company, 1939.

11. McCombs, R. B.: Internal Medicine in General Practice, Philadelphia, W. B. Saunders Company, 1943.

12. Hutter, A. M.; Middleton, W. S., and Steenbock, H.: Vitamin B Deficiency and the Atrophic Tongue, J. A. M. A. **101**:1305 (Oct. 21) 1933.

13. Sutton, R. L., and Sutton, R. L., Jr.: Introduction to Dermatology, ed. 4, St. Louis, C. V. Mosby Company, 1941.

years, pays but scant attention to Moeller's glossitis. The literature would seem to indicate, too, that the complaint of painful burning tongue, though not uncommon, is not a prominent symptom of anemia. Pernicious anemia is not uncommon; painful burning tongue sufficient for the patient to seek medical aid is relatively rare. Pernicious anemia usually can be influenced by treatment; Moeller's glossitis is affected but little by treatment. It would seem, therefore, that Moeller's glossitis is not necessarily a manifestation of pernicious anemia unless one is prepared to accept the concept that glossitis may be a forerunner of the changes in the blood. The case herein reported has been observed for six years, and repeated examinations of the blood over a long period have failed to reveal any evidence of pernicious anemia.

There is a difference of opinion, too, as to what constitutes the clinical picture of Moeller's glossitis, but if Moeller's description is to be accepted—as it should be—the morphologic changes and subjective symptoms are so sharp that they could hardly be missed. Yet the type of glossitis that is described as part of the picture of anemia is not similar to the glossitis that Moeller described. It would seem unwise, too, to enlarge the concept of the clinical picture into latent and florid forms, a type in which there is burning only or a form with smooth atrophy, for Moeller and most of the early writers have stressed as important symptoms the presence of persistent painful, red areas which do not respond to treatment, and their patients did not exhibit atrophy of the tongue.

The obvious conclusions to be drawn are no different from those made by Harris thirty years ago that Moeller's glossitis is a distinct type of inflammation of the tongue the cause of which is not known.

SUMMARY

A case of Moeller's glossitis in a young woman is reported. It has been present constantly for six years except on two occasions when she was pregnant. Complete remission of the disease during pregnancy has apparently never before been recorded.

The characteristics are listed which distinguish Moeller's glossitis from other diseases which produce areas of glossitis and from those in which there is burning and painful tongue.

Moeller's glossitis constitutes a distinct clinical entity, which, though uncommon, is probably not so rare as the scarcity of recorded cases would indicate. Its cause is not known, and, though in most cases it is said to occur in association with pernicious anemia, the connection cannot always be demonstrated. In the case herein reported there were no signs of anemia; there was a decided hormonal factor.

104 South Michigan Avenue.

ABSTRACT OF DISCUSSION

DR. EDWARD A. OLIVER, Chicago: Dr. Rattner has given us a most interesting and comprehensive discussion of this little known disease, known as Moeller's

glossitis. I have personally seen and examined this patient several times with him, and his description is an accurate one.

It was only after much consideration that we came to that diagnosis. The disease is not common, nor is it rare. We in Chicago have always been aware of it, chiefly because of the interest of our fellow Chicagoan, Fred Harris, in it. He called it to our attention in 1915. Since that time, we have been constantly on the lookout for it in rather obscure cases of painful tongue, and Dr. Senear and I have seen probably 2 cases of it in a number of years.

The serious feature of the disease is the exquisite pain and burning of the individual patches. The pain and sensitiveness may be compared with those produced by a second degree burn. Changes of temperature, contact with food, acid, salt and other condiments and even contact with the teeth and gums produce exquisite pain.

In this case, as in all others that have been described or in the cases that we have seen, there has been no associated pernicious anemia, nor has there been any associated avitaminosis. The fact that in this case the patient has been entirely well during her pregnancies points to a hormonal factor, and the fact that in Moeller's original report the patients were all women of middle age lends substance to that view. Dr. Rattner has explored that and all other fields to the utmost without discovering the cause of this most unusual case, and it is hoped that some time in the future a definite causal factor will be discovered for Moeller's glossitis.

Dr. Francis E. Senear, Chicago: I think that we are indebted to Dr. Rattner for calling attention to this subject. As happens often in dermatology, we become locally interested in a disease through a report such as that of Fred Harris in Chicago; I know that I presented a case before the Chicago Dermatological Society in the past year or two and found that even there, where the disease had been fathered in this country, we had so much lost track of it that many of the young men had never heard of Moeller's glossitis. As Dr. Oliver said, we have seen 2 cases together and I have seen 3 more at the University of Illinois College of Dentistry, making a total of 5 that I have in mind.

I had the privilege of seeing 1 of Fred Harris' 2 original cases, and later on he saw with me the man in the group of patients whom I have seen. That patient was in the later age group, so, as some one said in the discussion of Dr. Callaway's paper, he might well have come within the male climacteric period, and one could well believe, if there is a hormonal background for this disease, that his condition may have had such a background.

I have been much interested in disease of the mucous membranes for a long time, because a course is given to dentists each year in the University of Illinois College of Dentistry and these cases have been followed closely. I feel that there are two things that can be said, both of which Dr. Rattner has already brought out: first, that there is no connection with pernicious anemia on the basis of our experience; these patients have all been studied carefully, with no suggestion of anemia found in any of them, and, second, that the clinical characteristic is so definite that one feels that clinically there is such a thing as Moeller's glossitis. The sharp circumscription of the patches and the excessively raw, bright red appearance make it unlike any other disorder of the mucous membranes with which I am familiar, and certainly I do not think that there would be any difficulty ever, even with the atypical cases of geographic tongue, in differentiating them clinically.

TUBERCULOID LEPROSY OF LUPOID APPEARANCE

OSWALDO G. COSTA, M.D.
Extramural Teacher, Faculty of Medicine, University of Minas Geraes
AND
JOSÉ MARIANO, M.D.
Clinical Assistant, Faculty of Medicine, University of Minas Geraes
BELLO HORIZONTE, BRAZIL

WE THOUGHT this case worthy of being reported because of the resemblance of the lesions to lupus tumidus nonexedens and lupus tumidus exedens psoriasiformis. The clinical likeness was almost exact except that the lesions of true tuberculous lupus are easily perforated with a probe. It is also noteworthy that the evolution of the disease was of long duration but that there was never any phase of reaction.

REPORT OF A CASE

E. M., aged 22, a single Brazilian woman, not of the white race, a domestic servant, was living at Curvelo in the state of Minas Geraes.

There was no history of the patient having lived among lepers.

The patient stated that six years previously a lesion appeared on the middle of the upper third of the outer surface of the right forearm; this lesion increased in size until it attained its present dimensions. At the same time other lesions appeared at the level of the right maxillary region.

A general examination showed nothing abnormal.

A dermatologic examination showed that the lesions were situated at three different sites, namely the face, the right arm and the right forearm. The facial lesion was at the level of the right mandibular angle and consisted of nodules varying from 0.5 to 1 cm. in diameter. These nodules were clustered together in vaguely arched patches. The disease had lasted for six years (fig. 1).

The patch of skin included in the arched grouping was slightly atrophied. The color of the skin was normal both at the center of the lesion and at the periphery. The lesions were yellowish red and on palpation were succulent and easily compressed by the fingers. The skin covering the lesions was smooth, shining and slightly squamous. On pressure with glass a bister-colored tissue was observed. The other lesion was situated at the level of the right elbow, covering the upper half of the posterior surface of the right forearm and the epitrochlear region and extending to all the anterointernal surface of the elbow joint. At this point the dermatosis consisted of two extensive plaques. The oleocranial region was not affected. The first plaque, that on the forearm, was about 15 cm. long and 8 cm. wide. On examining any of the lesions with the curet, one saw that they were not friable but easily depressible. The lesion consisted of various tuberous groups of the same color, aspect and consistency as those on the face. In the groups of lesions, isolated nodules could be seen here and there; the skin between them was either normal or atrophied, with slight follicular pigmentation. Some lesions were ulcerated and covered with dark-colored crusts. The lesion on the inner

surface of the elbow was 10 cm. long and 6 cm. broad. The areas of healthy skin at this site were much smaller; the nodules were grouped in one extensive, more or less uniform plaque (fig. 2). The lesions showed longitudinal folds, which were in conformity with their relative flaccidity. This plaque, like the first one

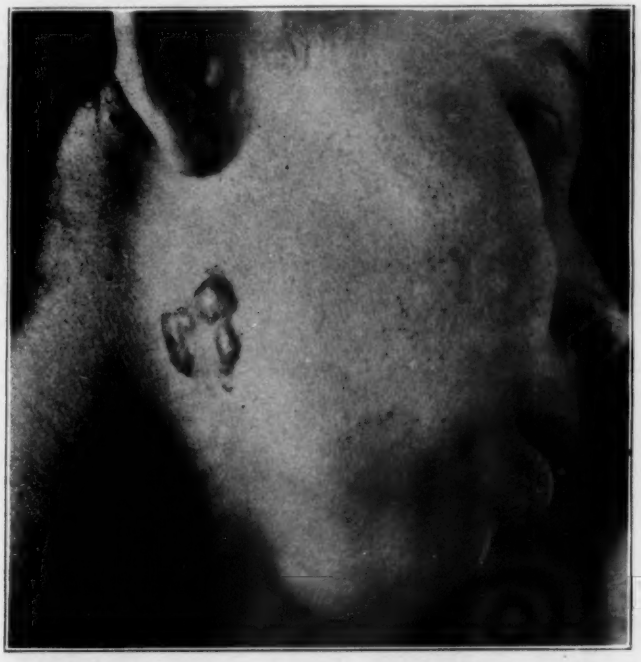

Fig. 1.—Tuberculoid leprosy of lupoid appearance, like lupus tumidus non-exedens.

Fig. 2.—Tuberculoid leprosy of lupoid appearance, like lupus tumidus exedens psoriasiformis.

described, was copper red and squamous. The lesions showed a certain translucence, allowing a fine arborization of blood vessels to be seen. When the sensibility was tested, superficial tactile hypesthesia was noted, with conservation of sensibility

to pain and heat. Nothing special was noted in the nerves which could be reached for examination. The eruption should be differentiated from common lupus, lupoid sporotrichosis, Boeck-Schaumann sarcoid and nodular syphilid.

A roentgen examination of the mediastinum, lungs and phalanges showed nothing abnormal.

A search revealed no alcohol-resistant or acid-resistant bacilli in the lesions. An inoculation of a guinea pig with material from the lesions produced no reaction (thirty days later). The Mitsuda reaction was tardily positive, with the peculiarity that the aspect of the patient's nodules was faithfully reproduced (an isomorphic reaction).

Tuberculin in dilutions from 1 : 100 to 1 : 1,000,000 elicited negative reactions.

Fig. 3.—Tuberculoid leprosy of lupoid appearance. General view of the lesion.

A histologic examination was carried out by Dr. Moacyr A. Junqueira, who gave the following report:

The fragment for examination was taken from the lesion on the forearm. There was keratosis, the corneal layers separating easily; a small area of parakeratosis was noted. The granular layer and the rete were atrophied. The basal layer was slightly sinuous and almost horizontal and showed areas of depigmentation. In two follicular orifices included in the section, dilatation and hyperkeratosis were noted. The derma was filled throughout with a dense inflammatory infiltrate, consisting of granulomas which at times ran together to form extensive areas. This infiltrate entered into contact with the epidermis at various points, causing it to atrophy through compression. These granulomas consisted of epithelioid cells, with a few giant Langhans cells and large numbers of lymphocytes at the periphery. In only one of these granulomas was there found a small area of fibrinoid necrosis at the center. Two horny cysts were seen in the tuberculoid infiltrate; one of these cysts corresponded to one of the follicles already mentioned.

Granulomas were found even in the superficial layers of the hypoderm. The vessels in the hypoderm and in the neighborhood of the dense and extensive infiltrate were, as a rule, dilated and surrounded by a lymphocytic sheath. In preparations stained by the Ziehl-Neelsen method, no alcohol-resisting or acid resisting bacilli were found (fig. 3).

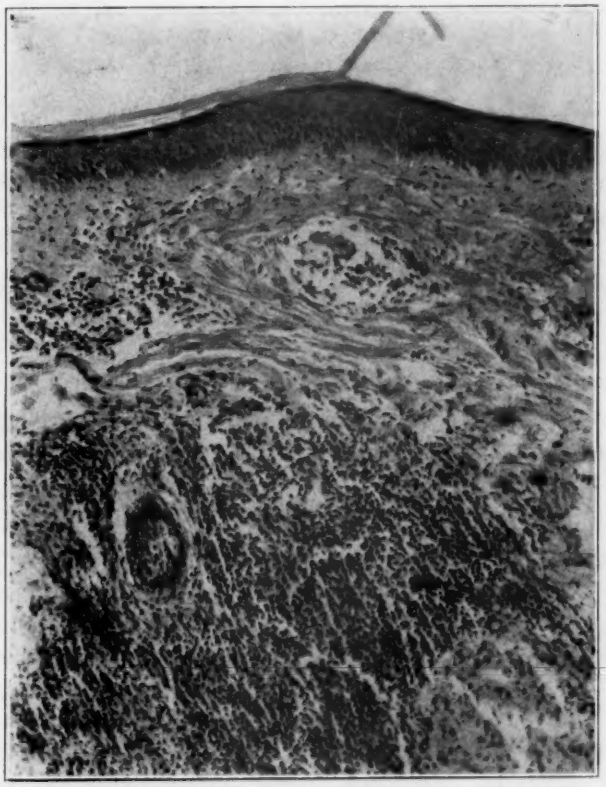

Fig. 4.—Tuberculoid leprosy of lupoid appearance. Details of the preceding figure. Note the abundance of lymphocytes in the periphery of the tuberculoid nodules.

SUMMARY

We have described a case of tuberculoid leprosy which we believe is interesting for: (1) the extraordinary likeness of the lesions to lupus tumidus nonexedens and lupus tumidus exedens psoriasiformis; (2) the long evolution of the disease without any manifestation of other lesions except the original ones, and (3) the nodules resulting from the Mitsuda-Rost test with their exact similarity to the nodules already described (isomorphic reaction).

Rua Ceará, 1691.

RETICULUM, OR LATTICE, FIBERS

Further Studies

STUART C. WAY, M.D.
SAN FRANCISCO

THESE studies pertaining to the argyrophil, reticulum or lattice fibers had a threefold purpose; first, to inquire into the factor or factors responsible for their development, second, to account for their presence in areas distant from vessels and infiltrating cells and, third, to inquire into their function and diagnostic value. In view of the scant attention that has been paid to the subject in dermatologic circles, it appears justifiable to begin with the fundamentals, even at the risk of approaching the elementary. Regardless of the voluminous literature, the histogenesis of these fibers is still a debatable problem.

Ormsby and Montgomery [1] hinted at their importance when they stated that "there is a third system of fibers in the corium known as reticulum or lattice fibers which increase in numbers in various pathologic conditions, especially those involving the reticulo-endothelial system of the skin."

Oppel [2] in 1891 seems to have been the first to use the term "lattice fibers" in describing the peculiar formations of connective tissue discovered by Kupffer which were present between the hepatic cells. Mall,[3] in the same year, announced that the framework of many organs and other tissues of the mammalian body is composed neither of white fibrous nor of yellow elastic connective tissue but of a third type of supporting substance, consisting of fine, interlacing fibrils which not only differ from the white fibers in appearance but are more resistant to both acid and alkaline solvents and are not as readily attacked by digestive ferments. To this new tissue, the word "reticulum" was applied because the fibrils of the lymph nodes, already bearing that name, were the first which he found to present the characteristics just men-

Read at the Sixty-Sixth Annual Meeting of the American Dermatologic Association, Hot Springs, Va., June 10, 1946.

1. Ormsby, O. S., and Montgomery, H. M.: Diseases of the Skin, Philadelphia, Lea & Febiger, 1943, p. 18.

2. Oppel, A.: Ueber Gitterfasern der menschlichen Leber und Milz, Anat. Anz. **6**:165, 1891.

3. Mall, F. P.: Das reticulirte Gewebe und seine Beziehungen zu den Bindgewebsfibrillen, Abhandl. d. math.-phys. Cl. d. k. sächs. Gesellsch. d. Wissensch. **17**:299, 1891.

tioned. In its present day usage, reticulum is a term applied to the form of connective tissue which is stained by silver impregnation methods. Mall's paper also demonstrated that the supporting fibrils of the spleen, gastric and intestinal mucosae, liver, lung, thyroid, cardiac muscle, basement membrane of the testes and the entire supporting structure of the kidney, including the basement membranes, were of the same type.

Maresch [4] in 1905, besides demonstrating lattice fibers in the liver and lymph nodes, showed that the musculature of the gravid uterus contains similar supporting structures. As to the skin, Ferguson [5] in 1911 appears to have been the first to mention their presence, at the dermoepidermal juncture. Zurhelle [6] in 1921 observed lattice fibers in the lymph nodes while investigating the pathologic changes occurring during the primary and secondary stages of syphilis and in a later study described their presence in numerous diseases of the skin. Later, Way and Klovekorn,[7] in 1926, while working in E. Hoffmann's clinic, under the direction of Zurhelle, studied the relationship of lattice fibers to normal and abnormal dermal structures and investigated eighty different dermatoses. The present paper repeats in part some of the earlier findings, for the benefit of English readers, and includes additional observations.

ORIGIN AND SIGNIFICANCE

Maximow and Bloom [8] stated that "Two main theories have been developed. According to the first, fibers develop through a direct transformation of living substance of the cells. According to the second theory, they arise between the cells through a condensation or crystallization of the liquid or semiliquid intercellular substance secreted by the cells. Some authors believed in a direct transformation of the cell processes of the fibroblasts into collagenous fibers, while others thought that they originate from mitochondria arranged longitudinally at the cell surface, which then separate from the cytoplasm."

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4. Maresch, R.: Ueber Gitterfasern der Leber und die Verwendbarkeit der Methode Bielschowskys zur Darstellung feinster Bindegewebsfibrillen, Centralbl. f. allg. Path. u. path. Anat. **16**:641, 1905.

5. Ferguson, J. S.: The Reticulum of Lymphatic Glands, Anat. Rec. **5**:249, 1911.

6. Zurhelle, E.: Histopathologische Studien an syphilitischen Lymphdrüsen des primären und sekundären Stadiums, Dermat. Ztschr. **34**:1, 1921. Derselbe: Ueber den anteil feinster Bindegewebsfibrillen, der sogenannten Gitterfasern, am Aufbau syphilitischer und anderer Hautefflorenzen, gleichzeitig ein Beitrag zu ihrer Konsistenz, insbesondere zu Härte des Primaraffektes, ibid. **35**:251, 1922.

7. Way, S. C., and Klovekorn, G. H.: Hautkrankheiten und Gitterfasern, Dermat. Ztschr. **48**:139, 1926.

8. Maximow, A. A., and Bloom, W. A.: A Textbook of Histology, ed. 3, Philadelphia, W. B. Saunders Company, 1938, p. 98.

Corner,[9] in discussing the origin of reticulum, stated that "It seems certain endothelial phagocytes perform phagocytic functions, lay down fibrils of reticulum and collagen and transform themselves into giant cells or syncytia under pathologic conditions. Probably the entire endothelium, considered in the freest sense of the term, presents a persisting mesenchymal, embryonoid tissue capable of extensive differentiation or de-differentiation, without which the body would be incapable of repairing the ravages of disease and injury." He then concluded that, in view of the almost universal association of vascular endothelium and reticulin, a reticulum is produced regularly by this tissue. Furthermore, he has always been able to demonstrate capillaries in close proximity to reticular complexes, with one exception; fibroblasts appear to be capable of producing reticulin under certain conditions, particularly in the medullary rays of the kidney.

Regardless of the fact that the majority of authorities are in accord that the reticulum is produced either immediately or indirectly by certain reticuloendothelial cells, other investigators, especially Isaacs,[10] have taken exception and voiced the opinion that the fibrillar structures of the connective tissue are the result of the coagulating and dehydrating effect of chemical reagents and that collagenous tissue is composed of a homogeneous colloidal substance. Others claim that reticulocytes themselves may enter into the formation of reticular fibers, because they can be stained to show a skein or network of basophilic material. Similar consideration has been given also to the wandering cells of Marchand, which refers to certain sparse rounded cells of rough outline which circulate freely through the connective tissue lacunae. They have ameboid movements and have been considered endothelial leukocytes or emigrant lymphocytes from the blood.

Reticuloendothelial is a term which implies, according to Sachs,[11]

> an intimate relationship between the reticulum cells and the endothelial cells of such organs as the liver and lymph nodes in which the endothelial cells not only serve as linings of the blood and lymph sinuses but are also believed by some to produce reticulum fibers. If we employ the term reticulo-endothelial cells without implying that these two cell types are identical, there remains no valid reason why the term should not be acceptable for the collection of these cells in the spleen, liver, bone marrow and lymph nodes. The reticulo-endothelial system is also supposed to embrace the entire group of tissue mononuclear phagocytes.
>
> The reticulo-endothelial system would thus consist of the reticulo-endothelial cells, that is, the reticular and endothelial cells of the spleen, liver, bone marrow, lymph nodes, adrenal and hypophyseal capillaries and the histiocytes (clasmatocytes

9. Corner, G. W.: On the Widespread Occurrence of Reticular Fibrils Produced by Capillary Endothelium, Contrib. Embryol. **9**:8, 1920.

10. Isaacs, R.: The Structure and Mechanics of Developing Connective Tissue, Anat. Rec. **17**:243, 1919.

11. Sachs, B.: The Reticulo-Endothelial System, Physiol. Rev. **6**:504, 1926.

and monocytes) of the tissues and the circulating blood. Whereas the term reticulo-endothelial cells would serve as a collective name for these elements, the terms reticular cells, endothelial cells, histiocytes, monocytes and clasmatocytes could be used to designate the individual elements where further differentiation is possible.

This reticuloendothelial concept also extends to the circulating blood.

Thus, Maximow and Bloom,[12] in discussing the origin of the blood cells, stated that

> the cells of the circulating blood may be divided into two groups according to their origin in the hemopoietic tissues. To the first group belong the lymphocytes and probably monocytes. They originate in the lymphatic tissue and are called the lymphoid elements. The second group consists of the erythrocytes and the granular leukocytes. These originate in the myeloid tissue and are the myeloid elements. All of the blood forming tissues of adult mammals have the same fundamental structure; a fibrous and cellular stroma of reticular fibers and cells within whose meshes hemopoiesis takes place.
>
> In the adult organism, the cells of the circulating blood seem to be quite independent from the connective tissue, but in reality, the relations between the two types are so intimate that no distinct line can be drawn between them. This is quite obvious if we follow the embryonic histogenesis of blood and connective tissue. It also becomes apparent under pathologic conditions especially in inflammation and in tissue cultures.

For the sake of completeness, the remaining constituents of the connective tissue of the skin will be briefly stated. The collagenous fibers are believed to be held together by a cementing substance that also forms a thin membrane on the surface of the fibers. The collagenous fibers, although nonelastic in the common sense of the word, are extremely flexible and offer great resistance to stress or strain. The elastic fibers branch at various angles and anastomose to form a more or less continuous network.

Many of the dermal structures, especially the cells, are believed to elaborate a jelly-like, amorphous substance which is related to the cement substance, keeping the fibrils together in the fibers and known as the "amorphous ground substance." These several kinds of connective tissues are probably much underrated. They play an important role in the nutrition of varoius elements embedded in them. Although this role is not completely understood, it is evident that all the substances which the cells of the other tissues receive from the blood and all the products of metabolism turned over to the blood and lymph must pass through some layer of connective tissue. There is also reason to believe that these products enter into the formation of reticulum fibers under normal and pathologic conditions and the investigations of Urbach [13] create the impression that they are also a factor in the mechanism of immunity.

12. Maximow and Bloom,[8] p. 70.

13. Urbach, E.: Textbook on Allergy, New York, Grune & Stratton, Inc., 1943, p. 168.

Weidman [14] stressed the need for further studies regarding the origin of reticulum, or lattice, fibers because he has observed on numerous occasions the presence of dense networks of reticulum in areas distant from blood vessels and cellular infiltration.

Results of Studies of Seventy-One Tissues

No. of Cases	Name of Tissue	Location	Density of Lattice Fibers
1	Actinomycosis	Neck	+++
1	Acanthosis nigricans	Axilla	++
2	Amyloidosis of the skin	Leg	—
1	Angiosarcoma	Cheek	+
1	Apocrine glands	Axilla	—
4	Basal cell carcinoma	Nose, ear and back	+++
2	Blue nevus		++ and —
1	Carcinomatosis	Generalized	+++
1	Colloid milium	Hand	++
1	Eczema (premalignant)	Breast	+++
2	Fibroma	Wrist and arm	+ and —
2	Fibrosarcoma	Anus and ear	++ and —
2	Fetal skin (8 and 5½ mo.)	Arm and leg	—
1	Glomus tumor	Forearm	+
1	Glossitis mediana rhombica	Tongue	—
1	Granuloma annulare	Hand	+
1	Granuloma pyogenicum	Gum	+
3	Leiomyoma	Finger and arm	—
1	Lichen planus	Back	+
1	Lipoma		—
3	Liver	Adult	+++
3	Lymph node	Adult	+++
1	Lymph node	Fetus	+++
1	Lymphosarcoma	Arm	+++
3	Melanoma	Ankle, foot and arm	+++
1	Mycosis fungoides	Neck	+
1	Myxedema	Ankle	—
3	Nevus verrucosus		—
6	Nevus pigmentosus	Ear and face	++ and —
1	Nevus pigmentosus (acanthotic type)		—
1	Radium atrophy	Forehead	++
2	Rhinoscleroma	Nose	++
1	Sarcoma (giant cell)		++
6	Sarcoma (squamous cell)	Lip and cheek	+++
1	Scleroderma	Back	—
1	Sebaceous nevus (colloid degeneration)	Cheek	++
3	Spleen	Adult	+++
1	Spleen	Fetus	+++
1	Syphilis	Chest	+++
1	Xanthoma tuberosum multiplex	Buttocks	+

MY STUDIES

For investigative purpose, seventy-one different tissues, normal and pathologic, were selected. In as far as possible, more than one example of a dermatosis was studied. Sections from each case were stained by

14. Weidman, F. D.: Personal communication to the author.

the Maresch modification of the Bielschowsky method, Foot's modification of the Bielschowsky method, iron-hematoxylin and iodine-eosin, Weigert's stain for elastic fibers and Unna's orcein method for elastic fibers. As suggested by E. Hoffman, Van Gieson's and iron-hematoxylin methods were used as counterstains in both of the silver impregnation methods to demonstrate normal collagen and the reticuloendothelial cells.

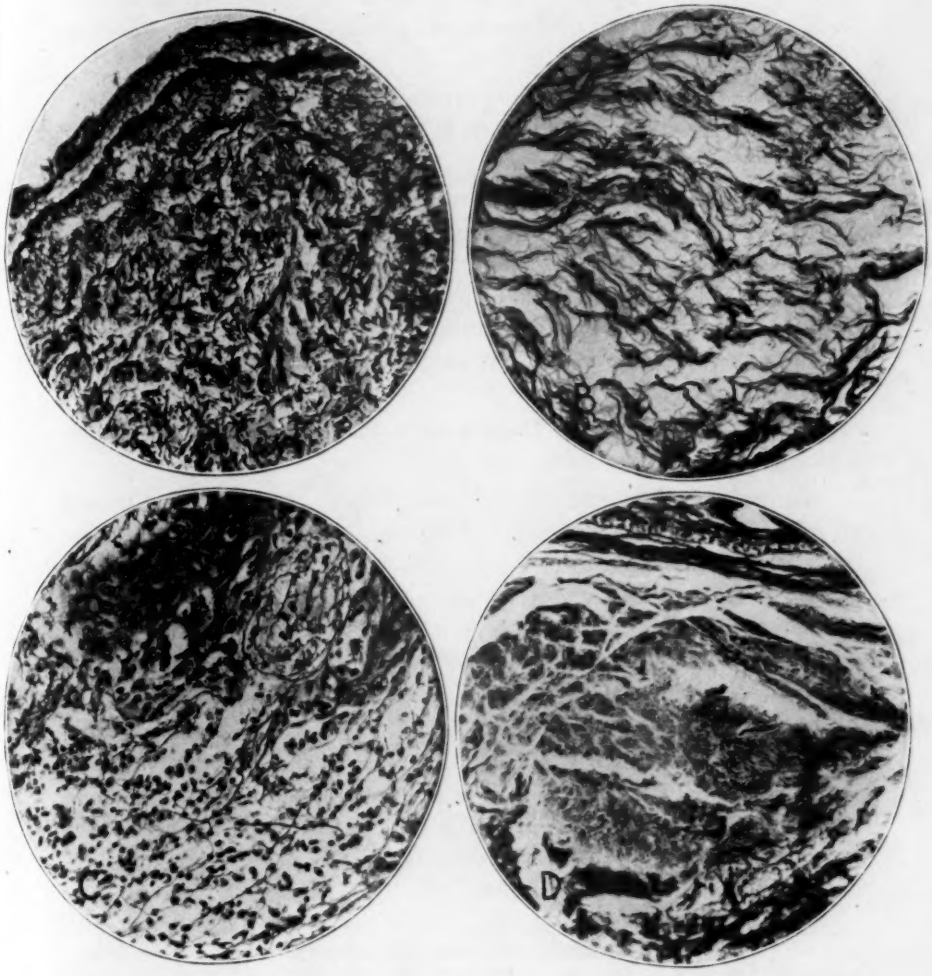

Fig. 1.—*A*, fetal tissue (8 months). Section showing fetal type of fibers. Note the absence of the lattice-like arrangement. Stained by Foot's silver impregnation method. *B*, normal adult tissue. Section showing normal adult precollagenous fibers. Stained by the Maresch-Bielschowsky method. *C*, squamous cell epithelioma. Section showing typical lattice fibers or pathologic precollagenous fibers. Stained by the Maresch-Bielschowsky method. *D*, amyloid degeneration. Section showing absence of lattice fibers in the amyloid substance. Stained by the Maresch-Bielschowsky method.

The histologic findings which follow may be regarded as brief protocols. In them, mention will be made only of such variations from the normal or pathologic as are thought to have a bearing, whether direct or indirect, on the reticulum.

NORMAL TISSUES

Skin.—In many of my sections, portions of normal skin were included. Lattice fibers were not observed in any of them, in spite of the report of Ferguson [5] that they occurred normally at the dermoepidermal juncture.

Apocrine Glands.—The fibers around the glands were of the normal precollagenous type such as is seen in slowly growing, noninflammatory tissue.

Fetal Skin.—The tissue came from 2 fetuses, 5½ and 8 months old. Many immature, young collagen fibrils were present which bore a close resemblance to reticulum fibers but differed from them in the following respects: 1. They failed to stain jet black with silver and were readily impregnated by Van Gieson's stain. 2. They lacked the lattice-like arrangements. 3. The fibrils were longer, had tapering ends and showed a tendency to curl.

Normal Adult Liver.—The classic extensive network was present which gives support to the hepatic cells.

Normal Adult Lymph Node.—The reticular fibers ramified through all parts of the node and formed networks of varying densities in different areas. These networks were especially dense and narrow meshed on the inner surface of the capsule, on the surface of the trabeculae, around the adventitia of the arteries and veins and throughout the parenchyma. The reticular fibers were more or less scanty within the center of the cortical follicles.

Normal Adult Spleen.—Around some of the vessels and extending from their walls, networks of reticulum fibers could be seen which were so extensive that they appeared to reach from vessel to vessel. Although splenic tissue is especially adaptable for cell studies with reference to the origin of argyrophil fibers from reticular cells, in no instance could such an origin be clearly demonstrated.

CONGENITAL MALFORMATIONS

Nevus Pigmentosus.—Seven cases were studied. In 2 there was not any reticulum, while 5 contained dense reticulum. In 2 of the 5 there was also collagenous degeneration, which in itself could account for the presence of lattice fibers. The other 3 had a history of recent increase in size. From the standpoint of origin of the fibers, no connection could be demonstrated between the fixed cells and the reticulum. The two

nevi which were devoid of reticular fibers were known to be of slow growth. The rapidly growing ones showing collagenous degeneration had especially dense reticular networks.

Blue Nevus.—In one specimen, the fibers were of the normal, precollagenous type and failed to stain with silver. The nevus cells were

Fig. 2.—*A*, nevus pigmentosus. Section showing normal precollagenous fibers. Stained by the Maresch-Bielschowsky method. *B*, nevus pigmentosus. Section showing a stroma that borders on the pathologic side. Clinical history of recent increase in size of the nevus. Stained by the Maresch-Bielschowsky method. *C*, nevus pigmentosus with collagenous degeneration. Section showing numerous typical lattice or reticulum fibers. Clinical history of recent increase in size of nevus. Stained by Foot's silver impregnation method.

located in a dense stroma which was free from inflammatory changes. In a second one, which was inflammatory and rapidly growing, numerous lattice fibers appeared in the papillary and subpapillary layers.

Nevus Verrucosus.—All three of the lesions studied failed to show reticulum fibers and were therefore believed to be of slow growth.

ATROPHIES

Radium Atrophy.—The tissue came from a 75 year old woman. Twenty years previously she had received a radium treatment for a basal cell epithelioma of the forehead. There was extensive collagenous degeneration of the papillary and subpapillary layers with vascular dilatation. Many of the collagen fibers stained blue with iron-hematoxylin and appeared curled and broken. A sharp line of demarcation existed between the atrophic and normal tissues. Although the cells within the dermis appeared normal in number, a dense reticulum fiber network was present where collagenous degeneration had taken place and was completely absent in the adjoining nonirradiated tissue.

DEGENERATIONS AND INFILTRATIONS

Acanthosis Nigricans.—The specimen came from the axilla of a 50 year old woman. There was no evidence of visceral malignant growth. The upper part of the dermis contained a dense mass of fibers of the lattice type which stained a deep black and displayed the usual netlike arrangement.

Collagenous Degeneration in a Sebaceous Nevus (Cheek).—Although inflammatory changes could not be detected, a dense lattice fiber network extended throughout the areas of degeneration and around the sebaceous glands. Their location appeared to be independent of the blood and lymph vessels and also of the nevus and other fixed cells.

Amyloidosis of the Skin.—The tissue came from the collection of Memmesheimer. Although the masses of amyloid degeneration did not contain reticulum fibers, a few normal precollagenous fibrils were present at their periphery.

Colloid Milium.—The lesion occurred on the dorsum of the hand of a 45 year old man. Staining by various methods revealed that collagenous degeneration and the reticulum fibers appeared simultaneously and that the location of the first limited the location of the second. Few fixed cells could be detected within these localized or sharply circumscribed colloid masses, and vessels were absent.

Myxedema.—The tissue came from the ankle of a Chinese man aged 30. The fibrils were of the normal type; although believed to be rapidly growing, they failed to stain jet black with silver and lacked the lattice-like arrangement.

Xanthoma Tuberosum Multiplex (Buttocks).—Lattice fibers in moderate numbers occurred about the vessels and within the areas of

lipid infiltration. Many other fibers simulated those of the lattice type but failed to stain with silver.

Eczema (Breast).—In this patient, a 46 year old woman, cancer of the breast developed two years later. Dense, perivascular networks of reticulum occurred in profusion throughout the entire dermis. This reticulum, although present among the infiltrating cells, failed to show a cellular connection or evidence of origin within cells. Mitoses were numerous, and in several instances macrophage-like cells could be seen in various stages of penetration of vessel walls.

Scleroderma.—The tissue came from the back of a 32 year old woman. Lattice fibers were completely absent.

SPECIFIC INFECTIOUS GRANULOMAS

Actinomycosis (Neck).—In spite of the dense, granulomatous infiltration which characterizes this disease and the abundance of lattice fibers in certain parts of the lesion, many of the heavily infiltrated areas failed to show the argyrophil fibers, nor did they always occur in abundance about the blood vessels.

Rhinoscleroma (Nose).—Although the infiltrating cells were mostly of the plasma type, numerous Mickulicz cells, macrophages and lymphocytes were present. Yet, where the infiltration was densest lattice fibers were greatly decreased in number in contrast to other areas containing thick lattice fiber growths and scanty cellular infiltrations.

NEW GROWTHS

Angiosarcoma.—The tissue was composed largely of new blood vessels. The infiltrating cells were endothelial in type and few in number. Elastic fibers were completely absent and the reticulum scanty.

Basal Cell Epithelioma.—The general structure was uniform in all the 4 cases. The masses of cancer cells were surrounded by dense networks of reticulum, in the meshes of which there were numerous lymphocytes and the macrophage type of cell. This network was equally dense irrespective of whether the infiltration was scanty or thick. In no instance did this lattice-like structure form a stroma for the invading cells. Although basal cell epitheliomas are relatively benign, only one out of the many examined showed normal precollagenous fibers forming at the border of the invading cancer cells.

Granuloma Pyogenicum.—The tissue was composed largely of newly formed blood vessels, although one area contained a few infiltrating cells, endothelial in type, together with an occasional lymphocyte; reticulum fibers taking the silver stain were few in number. Tumors composed of new blood vessels rarely show a profusion of lattice fibers.

Fibroma (Arm) and Recurrent Fibroma (Wrist).—The elastic fibers in the recurrent fibroma were decreased or absent, depending on the amount of fibrous tissue in any one area. Where mild inflammatory changes existed, a few lattice fibers could be detected. However, in a separate area, where an intradermal hemorrhage had occurred a few hours prior to the removal of the tissue, a fine, dense reticular network had already formed. The fibroma of the arm contained a stroma which stained a purplish to brownish color with silver and was of the normal precollagenous type.

Fibrosarcoma (Anus).—Reticulum fibers occurred in abundance within the tumor mass and especially around the blood vessels and sweat and sebaceous glands. The amount of the collagenous stroma in this type of growth appears to influence the density of the developing reticulum fibers.

Fibrosarcoma (Ear).—The precollagenous fibers were apparently of the normal type, because they failed to take the silver stain. The absence of lattice fibers in a lesion in which macrophages or phagocytic cells, blood and lymph vessels exist is significant in view of the present accepted theory of origin, as they are generally believed to arise from these cells or from the endothelium of the vessels.

Glomus Tumor (Forearm).—The tumor appeared to be noninflammatory. Collagenous degeneration, however, was present, and it was in such areas that reticular fibers occurred in moderate numbers.

Leiomyoma.—In all 3 cases the fibers were of the normal precollagenous replacement type.

Lymphosarcoma (Arm).—Although the sections contained an extensive lattice fiber growth, which was most pronounced in the heavily infiltrated areas, no connection could be seen between the cells and the fibers from the standpoint of origin.

Melanoma (Ankle).—There was a thick stroma of reticulum fibers whose density was neither proportional to the number of the tumor cells nor apparently influenced by the presence or absence of blood vessels.

Melanoma? (Foot).—Microscopically, this lesion was regarded as an actively growing junction type of nevus. Many of the cells in the nest appeared to be proliferating, while some in other parts of the section seemed quiescent. The areas showing evidence of rapid growth contained reticulum fibers not only among the pigmented cells but also at their periphery. The best example of this apparent attempt to limit growth is seen in basal cell epitheliomas.

Squamous Cell Epithelioma.—Reticulum fibers were especially dense, irrespective of the type or number of infiltrating cells and their location.

Although in some instances the fibers appeared to wall off the cancer cells, this did not occur in the highly malignant tumors whose stroma was largely made up of the same kind of lattice fibers. In one lesion the reticulum fibers appeared to be continuous with the walls of the lymph and blood vessels, yet unattached to the infiltrating cells, including the macrophages.

RÉSUMÉ OF STUDIES OF TISSUE

1. In no instance in the hundreds of sections examined could it be clearly demonstrated that reticulum fibers arose from or were directly connected with either the infiltrating or the fixed cells of the dermis.

2. Although reticulum fibers frequently appeared to be continuous with the walls of the blood vessels, they were able to develop in areas distant from blood vessels and devoid of infiltrating cells.

3. The presence of reticulum in certain organs that are normal is not incompatible with the theory that some factor such as an enzyme leads to their development and that such a factor is elaborated by the cellular constituents.

4. As to primary degenerative disease in the skin, areas of amyloid degeneration did not contain reticulum fibers, and they were also absent in myxedema.

5. On the other hand, all areas of collagenous degeneration studied contained reticulum fibers, and the two appeared to develop simultaneously. This development was best illustrated in colloid milium, in which a slight decrease in the density of the fibers was also noted in the older nodules.

6. The number of reticulum fibers in pathologic tissue did not parallel the density of the infiltrating cells; their scantiness in certain parts of the sections of actinomycosis and rhinoscleroma suggests that under certain conditions toxins are present which are capable of inhibiting their development.

7. An important factor in determining the number of reticulum fibers in pathologic conditions of the skin, especially tumors, is the amount of collagenous stroma present.

8. Growths composed largely of new blood vessels such as the angiosarcomas and pyogenic granulomas contained few reticulum fibers.

9. Reticulum fibers in pigmented and similar nevi are an indication of rapid growth.

10. Argyrophil fibers were absent in dermatoses (for example, keratosis palmaris et plantaris) whose pathologic changes were limited to the epidermis and in such diseases as pityriasis rosea, in which only slight dermal variations from the normal occur.

COMMENT

The findings just recorded for the skin may be arranged into two groups: first, those which bear on the histogenesis of reticulum fibers and, second, those which have significance in disease.

Histogenesis.—The phenomena support the theory of Plenk [15] that the reticulum fibers in normal tissue, such as liver, spleen and lymph nodes, represent a third kind of connective tissue and that they have mechanical qualities different from collagenous and elastic elements, so that they originate (and after that persist) when the functional demands on the tissue make it desirable.

Too, according to Maximow and Bloom,[16] many histologists have pointed out that "when the first intercellular fibrils develop in the embryo, they often make their appearance without any apparent relation to the cells. They are first seen far from the cell bodies, in the structureless, liquid or jelly-like substance which fills the free spaces in the mesenchyme and which is undoubtedly a passive, lifeless material secreted by the cells. Nor is contradictory the fact that it is possible to obtain collagenous fibers in connective tissue cultures growing outside the body. Apparently the development of collagen in an embryo, in young scar tissue and in tissue culture, is identical in principle." The appearance of a dense reticulum around blood vessels within such a short time as forty-eight hours (Way and Klovekorn [7]) further strengthens the theory; the development of formed structures at a rapid rate is more consistent with processes that are of the order of "precipitation" than with the slower processes which involve biologic activity of cells. I should take a step further by offering the hypothesis that the "gelation" is mediated by a factor or hormone which acts on an enzyme produced by the reticular cells of liver, spleen, lymph nodes and other organs and that the phenomenon is possibly analogous to the mechanism in fibrin formation. Such a hormone would exist in a more concentrated form at its site of origin and in more dilute form in the blood stream. The appearance of reticulum fibers first around a blood vessel may imply that it is here that the activating factor first comes in contact with the amorphous ground substance.

The evidence favoring this enzymic theory is as follows: First, the reticulum fibers can occur in regions where there are not cells of any kind, including those of the reticuloendothelial system, such as the regions of collagenous degeneration which were frequently not associated with inflammatory changes. It would be especially difficult to explain an origin of the fibers from reticuloendothelial cells and vascular endo-

15. Plenk, H.: Ueber argyrophil Fasern (Gitterfasern) und ihre Bildungszellen, Ztschr. f. d. ges. Anat. (Abt. 3) **27**:302, 1927.

16. Maximow and Bloom,[8] p. 100.

thelium in such regions; moreover, my findings show that they need not even be in the immediate vicinity of blood vessels. Second, tissues containing heavy inflammatory infiltrations, including macrophages, do not necessarily contain dense reticulum; this might speak for the necessity of a factor of specificity on the part of the cells in the direction of enzyme production. This theory is submitted only as a theory and with the full realization that physiologicochemical tests are necessary to test what it may be worth. It may, though, serve as a point of departure.

Dermatopathology.—Reticulum fibers were absent in myxedema, in amyloid degeneration, in conditions limited to the epidermis and in such diseases as angiokeratoma, keloid, keratosis follicularis, molluscum contagiosum, neurofibroma and syringoma. According to my theory such absence could be due to lack of enzyme in these lesions. This deficiency might be explained on the basis of lack of need for rapid replacement of tissue or because of the presence of inhibitory toxins. As to nevi, it will be recalled that reticulum appeared in rapidly growing ones. Inasmuch as this was the case whether inflammatory changes were present or not, its presence has prognostic value, particularly in the cases in which the inflammatory changes are lacking.

CONCLUSION

There are reasons for the hypothesis that reticulum fibers originate in a lifeless colloidal sol in the tissue spaces as the result of a hormone-enzyme interaction. On the basis of my materials, normal fetal and adult dermal tissues are devoid of reticulum fibers.

The ability of precollagenous tissue to take the silver stain is dependent on its age and rate of growth.

Conditions as to reticulum may be significant in several dermatoses. 1. When present in nevi (which may be the case even in the absence of inflammatory reactions), it indicates rapid growth. 2. The fact that in dermatoses of exogenous origin they develop first in the papillary layer of the dermis may be significant in evaluation of those due to primary irritants and those of hematogenous origin. 3. The presence of reticulum fibers within areas of collagenous degeneration and their absence in myxedema serve to differentiate one from the other.

ABSTRACT OF DISCUSSION

DR. FRED D. WEIDMAN, Philadelphia: The large material presented by Dr. Way is eloquent of the strong foundation for the findings which he has reported, and the lantern slides also speak for some of the diagnostic results which have come from his studies, particularly in the matter of the diagnosis of rapid growth in nevi (and the potentialities therein) even before inflammatory infiltration has developed in connection with it.

It must be remembered that there is a difference between reticulum, on the one hand, and reticuloendothelial tissue, on the other. Reticuloendothelial tissue is

obvious in hematoxylin and eosin sections, but the reticulum fibers, such as Dr. Way has been discussing, are not visible; a silver technic is necessary.

It is regrettable that reticulum stains are not employed more commonly in dermatologic circles. The technic is not too difficult, and yet technicians commonly shy from it. A simple and satisfactory one is included in "Approved Laboratory Technique" (Kolmer, J. A., and Boerner, F.: ed. 4, New York, D. Appleton-Century Company, Inc., 1945). Variant 1, described on page 942, is the one I use.

Finally, there is an increasing interest in the diseases of connective tissues. For years, the epithelial ones have dominated the medical scene. Recently, the Russians have been active in the development of antireticulocytotoxic serum in the treatment of various diseases, and I know of one dermatologist who is now investigating its usefulness in the cutaneous field. It is indeed welcome to have more and more data submitted as to the possible functions of these much neglected tissues, and Dr. Way has rendered a service in submitting this thesis of an enzymic property which leads to the production of reticulum.

DR. HAMILTON MONTGOMERY, Rochester, Minn.: Dr. Way has pioneered in the study on reticulum, or lattice, fibers. He once wrote a paper on grading of cancer of the skin by reticulum stains. In an unpublished study of a series of cases of basal and squamous cell epithelioma, I was able to confirm Dr. Way's findings and found that classification by use of Maresch-Bielschowsky staining checked with Broder's classification of gradation and that the two methods of classification intergraded perfectly. As Dr. Weidman has stated, however, one must have a good technician to obtain a good Maresch-Bielschowsky stain or any modification thereof.

I make use of this stain frequently. I found that lupus erythematosus shows involvement of the reticuloendothelial system but also a definite increase in reticulum fibers. There is also increase in reticulum fibers in mycosis fungoides and Kaposi's sarcoma, and perhaps one might find it in eosinophilic granuloma, although I did not have the opportunity to make reticulum stains in a case I had the opportunity to study. In regard to the epithelial versus the neural origin of nevi, it must be remembered that the Maresch-Bielschowsky method stains reticulum and nerve fibers indiscriminately. There is another silver stain, Bodian stain, which will stain nerve fibers and not reticulum fibers.

DR. STUART C. WAY, San Francisco: First of all, I should like to thank the discussers, especially Dr. Weidman, who made many valuable suggestions during the preparation of this paper.

Dublin, in a recent paper entitled "Reticulum" (*Arch. Path.* **41**:299-318, 1946), stated that reticulum is probably formed by intercellular precipitation of a secretion produced by reticular cells, histiocytes, monocytes, lymphocytes, vascular endothelium, fibroblasts and both smooth and striated muscle but did not explain the mechanism of the process. In other words, his studies tend to confirm my impression that the development of formed structures at a rapid rate is more consistent with processes that are of the order of "precipitation" than with the slower processes, which involve biologic activity of cells.

I might also add that there is a difference in reticulum formation in syphilis, referring to the chancre and the gumma, and that in tuberculosis of the skin, the growth being much denser in syphilis.

ROLE OF FOOD ALLERGY IN ECZEMATOID DERMATITIS

MAJOR JAMES M. FLOOD
AND
CAPTAIN DANIEL J. PERRY
MEDICAL CORPS, ARMY OF THE UNITED STATES

THE TERM "eczematoid dermatitis" is used in this paper to denote a group of somewhat heterogeneous dermatoses of various morphologic types which are eczematous in character and resistant to treatment and do not belong to any other, more clearly delineated, clinical picture. It is well recognized that multiple etiologic factors often contribute to the production of eczematoid dermatitis (Stokes [1]). The present paper deals with one of these factors, namely, food allergy, which we have demonstrated to be the primary factor in a number of cases. Thirteen cases in which the offending foods were discovered by trial or elimination diets are reported. Ingestion of these foods caused an exacerbation of the dermatitis within twenty-four hours. Elimination of these foods was followed by prompt healing of the cutaneous lesions.

Approximately half the patients referred because of cutaneous diseases to a general hospital in the southeastern United States suffered from eczematoid dermatitis of the hands and feet. These patients were admitted with a variety of diagnoses: "nummular eczema," "contact dermatitis with secondary infection," "dyshidrotic eruption of the hands and feet," "pompholyx," "dermatophytosis of the hands and feet with secondary infection," "contact allergy" and "recurrent vesicular eruption of the hands." They had had numerous and prolonged periods of hospitalization. A few responded to local treatment, control of emotional problems, elimination of contact allergens, clearing up of pyogenic secondary infection or removal of foci of infection. However, in many cases these measures failed to produce any lasting improvement. The patients continued to have active patches of dermatitis, which gradually became larger, and new patches continued to appear. Routine scratch and intradermal tests were of little value. The lack of lasting improvement after all other etiologic factors had been removed or reduced to a minimum made us believe that food allergy was playing a definite role in the

Dr. Flood is now with the Robert Packer Hospital and Guthrie Clinic, Sayre, Pa., and Dr. Perry is in the Department of Dermatology, University of Pennsylvania School of Medicine, Philadelphia.

1. Stokes, J. H.; Lee, W. E., and Johnson, H. M.: Contact, Contact-Ineffective and Infective-Allergic Dermatitis of the Hands, J. A. M. A. **123**:195 (Sept. 25) 1943.

production of the dermatitis. With an excellent opportunity to observe the patients closely while they were on trial diets, several patients with severe eruptions were tested, and the results were most gratifying. It was found that the dermatitis flared up dramatically when certain specific foods were ingested. Consequently, we have continued our studies along these lines.

METHODS

Three different methods of determining the reactions to food substances were used: (1) the strict trial diet, (2) the elimination diet and (3) the food diary.

1. *The Strict Trial Diet.*—The strict trial diet is carried out by strict elimination of all food for twenty-four hours and daily testing with simple foods. It is by far the best method, but it is the most difficult for the patient and usually requires hospitalization. It is applicable to all types of eczematoid dermatitis and may be used in any stage of the process provided secondary infection, when present, is under control with local treatment and sulfonamide compounds taken by mouth or penicillin received intramuscularly. The method used is essentially the same as that outlined by Stokes [2] except that milk or buttermilk is not used as the initial food. The purpose of the experiment, the method of application of the diet and the methods of evaluating results are explained to the patient, and the responsibility of adhering to the diet is transferred to him. The following plan is then followed:

1. He is given castor oil (45 cc.) if there has been a recent flare-up and is allowed to have nothing by mouth for twenty-four hours except water, to which a little sugar may be added.

2. After the first twenty-four hours there is usually an improvement in the patches of dermatitis, less itching and few or no new vesicles. The patient is then allowed to have his first food, usually potatoes. Salt may be used but no pepper or butter. He receives only potatoes on this day.

3. On the third day the patches of dermatitis are inspected for flare-ups, which will be evidenced by (*a*) increase in itching coming on two to eight hours after the intake of food, (*b*) erythema of the patch, (*c*) new vesicle formation and (*d*) weeping of the patch. It is important to be able to distinguish new vesicles from the old ones, and after a little practice this is easily done. The new vesicles are in various stages of development, especially in regard to size; their walls are usually taut and translucent and the fluid clear. New vesicles have a zone of erythema which fades in twelve to thirty-six hours; then the top becomes brown or yellow, and the tenseness of the vesicle is lost. The new vesicles usually appear on the site of the dermatitis, but new patches may develop at any time, especially with a severe reaction. Weeping of the patch usually occurs only with severe reactions, and when it does occur it means that it will take three to four days for the flare-up to subside. If none of these signs are discovered the patient is allowed to continue with potatoes, and a new food is added. The second food selected is usually beef.

4. The patches of dermatitis are inspected daily, and as long as there is no flare-up a new food is added each day. When a reaction does occur the time of its onset and its severity are noted, and use of this food is discontinued. The food may be tested again at a later date.

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2. Stokes, J. H.: Fundamentals of Medical Dermatology, ed. 7, Philadelphia, Department of Dermatology Book Fund, 1942, p. 218.

5. When there is a questionable reaction, the food is either continued for one or more days without the addition of a new food or discontinued and tested at a later date.

6. With some foods the reaction will be severe and will require two to four days for the flare-up to subside. During this period no new foods should be added. It is unfortunate if such reactions occur early in the testing, but such adversity is usually overcome and the patient is willing to continue with the few foods that are allowed until the flare-up subsides and he is again ready for testing.

7. After the diet has progressed for several weeks a persistent but mild flare-up may appear daily. This usually means that a food is being taken to which the patient is mildly sensitive and which was overlooked during the testing. In such cases the diet is reviewed, and a list of foods is made for a basic diet. This list should contain only foods which the medical officer and the patient feel have been nonoffenders on previous testing. The basic diet is continued for four to six days, and after sufficient improvement new foods are added or questionable foods are retested.

8. In the beginning only simple foods—potatoes, beef, pork, the various fruits and vegetables, milk, eggs and wheat—are added, and after the diet has progressed sufficiently mixtures of foods, such as salads, bread and cake, may be used.

9. When pork is added, the patient may have bacon, ham and, later, sausage. Wheat is best tested by the use of Cream of Wheat. Dry cereals should be tested late in the diet because of the variety of flavoring materials added to such cereals.

10. The responsibility of keeping the diet is placed entirely on the patient. In most cases this cooperation is excellent, even from persons with lower than average intelligence. One or two definite flare-ups following a period of quiescence serve to convince even the most skeptical persons that they are on the right road and that recovery will follow strict adherence to the diet. Most of the patients, having suffered from the dermatitis for a long period with little relief in the past, are grateful for improvement. Occasionally a patient will cheat, but this can usually be suspected. The patient is not accused of cheating, but with every flare-up the last food added is removed, and soon the patient realizes that his diet is being restricted so much that cheating is not worth while. This is more effective in overseas theaters, where post exchange supplies are rationed and extra food is not available.

11. A good dietitian is of great value in helping the patient select foods, in preparing a small group of foods in a variety of appetizing ways and in seeing that the patient gets enough to eat.

12. After the first few weeks the patient learns to recognize exacerbations, and he can continue testing foods on his own initiative. He is taught the various ingredients of complex mixtures and is made to realize that if he is sensitive to eggs he cannot eat cake, custards, ice cream and other foods containing eggs. The strict trial diet is by far the most exact method of determining food allergy. It is the most difficult to carry out and usually requires hospitalization. Full cooperation of the patient is necessary, and frequent assurance by the medical officer helps the patient over the most difficult periods. This method is applicable to all types of persons in good nutritional state. Early in the treatment there is some loss of weight but this is usually not serious, and supplementary vitamins are not necessary. If they are used they must be tested like other substances. This is particularly true of vitamin B complex.

The following 2 cases illustrate the use of the strict trial diet.

CASE 1 (12 in table).—A nurse aged 24 suffered from a pruritic papular and vesicular eruption of her fingers for approximately one year. She had received local treatment, with little improvement. A series of cutaneous tests were made shortly after the onset, and she had positive reactions to a group of sea foods and cheeses. Elimination of these foods produced no improvement. When she was first seen in our section, she had numerous excoriated papules and vesicles on the dorsum and sides of her fingers, extending down and involving the webs. She also had a few excoriated papules in the axillary folds and some about the abdomen. She was given a course of antiscabies treatments with a preparation of sulfur, but this failed to produce any improvement. She was then given a strict trial diet, and after a twenty-four hour period of starvation there was decided improvement and almost complete absence of pruritus. She was then allowed to have potatoes, which produced no flare-up. The next day she was given beef, with no reaction. On the fourth day she requested coffee rather than a vegetable and took three cups of coffee during the day in addition to potatoes and beef. During the night she was awakened by an itching of the hands, and the next morning she presented patchy erythema, vesiculation and excoriation of the fingers. Coffee was removed from her diet, and other foods were added successively each day, without a flare-up. After two weeks of being tested and being found sensitive only to coffee she was given a full diet with the exception of coffee, and her hands remained clear. Coffee was tried again after one and after two months and provoked a reaction each time. No attempt was made to determine whether the allergen was coffee or an added flavoring agent such as chicory.

This case illustrates a patient's sensitivity to one common food, its detection by the trial diet and cure of the dermatitis by elimination of the offending food.

CASE 2 (5 in table; fig. 1).—A 27 year old white soldier began to have a pruritic dermatitis in the third interdigital space of his left hand in June 1944. During the next six months the eruption progressively spread to the lateral border and the third and fourth fingers of his left hand. Multiple types of local therapy were utilized, without affording relief. He was admitted on two separate occasions to a forward field hospital, each admission lasting for three weeks. Local and general therapy at that installation had no effect; so he was transferred to our section in a general hospital. An examination on his admission disclosed acute, denuded, oozing, crusting, patchy eczematoid dermatitis of all surfaces of the third and fourth fingers, all the interdigital spaces and the entire palmar surface of the left hand, the volar surface of the left wrist and the right thenar eminence. The next thirty days were utilized in treating the pyogenic element, and at the end of this period there remained erythematous, dry, scaling patches, moderately to mildly pruritic, with transitory discrete vesicles. He was given a strict trial diet and for twenty-four hours had nothing by mouth except water. On the following day potatoes were added, with no reaction resulting. Next, beef was added to his diet, again without subjective or objective changes. At daily intervals thereafter, tea, bread, chicken, string beans, Cream of Wheat, milk and chocolate were added, without change, except that the pruritus entirely disappeared and vesicles were no longer present. The next food added was a mixture of grapefruit and orange juice, which he drank at the noon and evening meals of the day. About nine hours after the

latter meal his hands began to burn. This burning continued unabated throughout the night, and on the following morning there was a definite increase in the erythema and small denuded areas appeared at the sites of the original cutaneous involvement, particularly on the dorsal surfaces of the fingers of the left hand and the right thenar eminence. Use of all fruit juices was discontinued, and the reaction subsided in thirty-six hours. The denuded areas epithelized in four days. Next, coffee and rice were added and produced no reaction. Eggs were then added to the diet and eaten at the evening meal of the same day. On the following morning the patient had many new vesicles, estimated at fifty, and an increase in the erythema of the palmar and dorsal surfaces of the third and fourth fingers of his left hand. Eggs were diiscontinued. The vesicles were dry in thirty-six hours and disappeared in seventy-two hours. Pork was next added and eaten at the noon meal. Ten hours later his hands were moderately pruritic, and the following morning he had many new vesicles of the palmar surface and the third and fourth fingers of his left hand. Pork was eliminated, and the vesicles disappeared in seventy-two hours. Butter, cabbage, macaroni, tuna fish, peas, carrots, wheat cereal (dry) and salmon were successively added at daily intervals without producing a reaction. Peanuts, tomatoes, tomato juice and cheese produced exacerbations similar to those following eggs. Grapefruit and orange juice also produced flare-ups when retested separately. At the completion of this study there was only residual lichenification at the original sites of involvement. After complete testing and retesting, the patient was found sensitive to orange juice, grapefruit, eggs, pork, peanuts, tomatoes and cheese. As long as he avoided these foods, his dermatitis remained in abeyance.

This case illustrates the role of multiple food allergens in producing eczematoid dermatitis of the hands.

2. *The Elimination Diet.*—The second method is similar to that proposed by Rowe,[3] in which the patient is given a basic diet consisting of supposedly nonallergenic foods. It is applicable only in cases in which there are few sensitivities. Our experience with the trial diet indicates that it is extremely difficult to select a basic trial diet which will not contain at least one food to which a patient is sensitive. After the patient has been on the basic diet for one week, there should be a definite improvement in the dermatitis. If this is not evident, the procedure might as well be abandoned. When improvement is manifest, foods are added and observations are made daily, as in the case of the trial diet. Thus the only essential difference is that in the trial diet we start with no food at all whereas in the elimination diet the patient is allowed a basic diet made up of a combination of foods which one hopes will not contain allergens. The choice of the basic diet will depend on the food available and the patient's past experience with known sensitivities to food.

The following report of a case illustrates the use of this method.

Case 3.—A 30 year old white soldier had a pruritic, patchy vesicular dermatitis of his right hand approximately one year before his admission to the hospital. The lesions showed exacerbations and remissions and spread to the fingers of his left hand. Multiple local therapeutic agents were utilized, and he spent one month in a forward field hospital, where all therapy proved to be valueless.

3. Rowe, A. H.: Food Allergy: Its Manifestations, Diagnosis and Treatment, Philadelphia, Lea & Febiger, 1931.

Fig. 1 (case 5).—Acute eczematoid dermatitis of the palms and dorsa of the hands as it appeared on March 20, 1945.

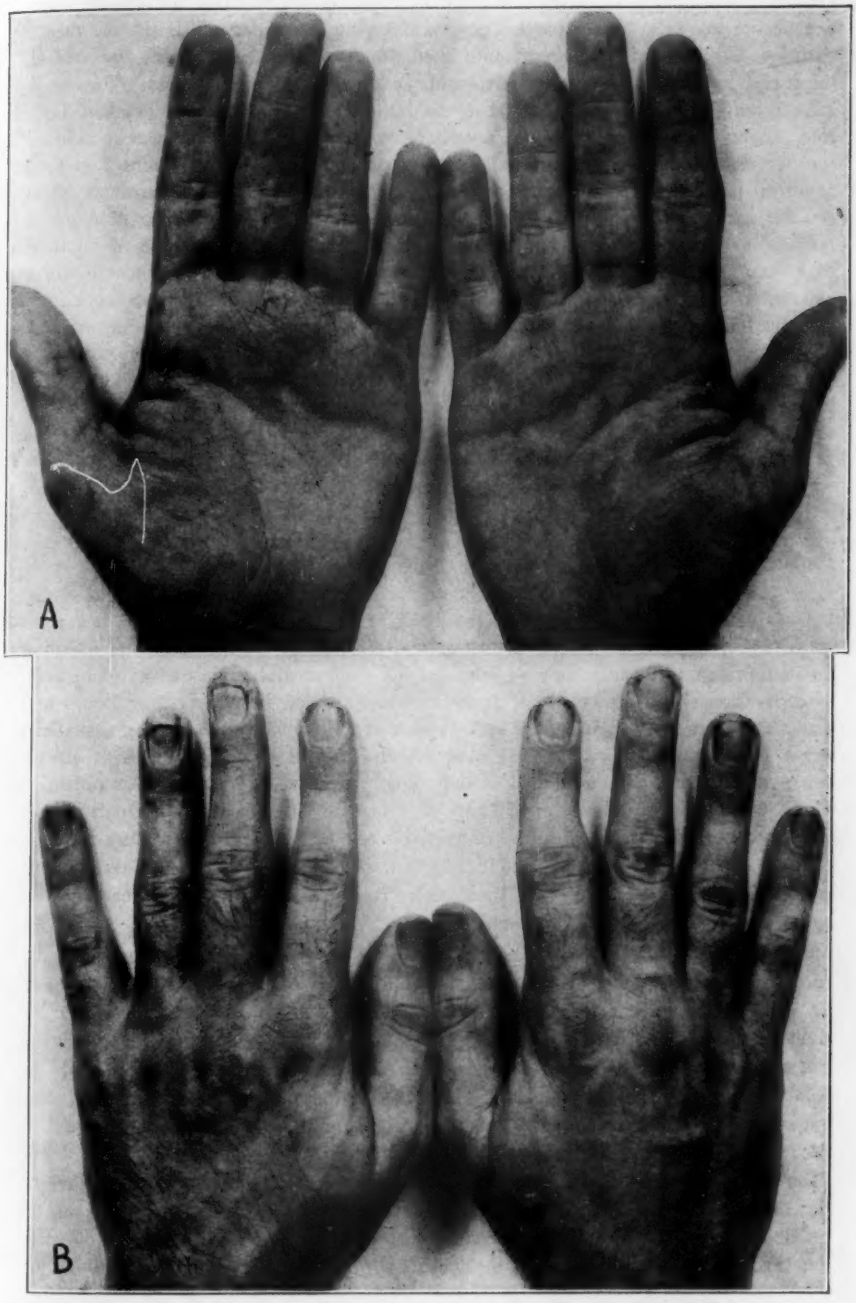

Fig. 2 (case 5).—An improvement in the dermatitis as seen on May 18, 1945, following a trial diet and elimination of string beans, eggs, oranges, pineapple, tuna fish, tomatoes, beets, American process cheese, pork, grapefruit, asparagus and baked beans.

On his admission to our section a physical examination revealed no abnormalities except for the presence of patchy eczematoid plaques of dermatitis on the dorsal surfaces and sides of the second and third fingers of his right hand; the second, third and fourth fingers of his left hand, and both thenar eminences. Two days after admission he was given a basic elimination diet consisting of chicken, beef, rice, string beans, potatoes, tea, oatmeal and sugar. This diet was continued for five days, during which time all pruritus disappeared and the lesions regressed about 60 per cent. On the sixth day of the diet mutton was added, without effect on the patient's dermatitis. On the seventh day pork was added. He ate a large slice of pork sausage at the noon meal, and eight hours later he noticed that his hands were burning and pruritic. This eruption gradually became worse and lasted throughout the night, awakening the patient on three separate occasions. On the following morning he had ten new vesicles on his fingers. The original plaques of dermatitis were denuded and more erythematous. Use of pork was discontinued immediately, and in forty-eight hours the vesicles and erythema disappeared and the denuded areas were epithelized. Next, coffee was added to the diet, with no subjective or objective changes. Bread was added on the following day and was eaten at two meals. Six hours after the last meal the original sites of dermatitis began to burn. The next day these lesions showed a decided increase in erythema, and many small denuded areas were seen. Use of bread was discontinued, and the acute reaction subsided in thirty-six hours. Carrots, macaroni, spaghetti, tomatoes, onions, and peaches were added at daily intervals, in that order, without effect on the dermatitis. Next cheese was added and eaten at the noon meal. Eight hours later the patient's hands began to burn, and they continued to do so throughout the night. On the following morning he had fifteen to twenty new vesicles on his fingers and both thenar eminences. Use of cheese was discontinued, and the vesicles dried in twenty-four hours and disappeared in forty-eight hours. A similar reaction was provoked by chocolate, eggs, butter and lemonade. All other foods, including nuts, fish, fruit juices, peas, cabbage and carrots, added at daily intervals, had no subjective or objective effect on the dermatitis. At the end of this study the patient's dermatitis was 99 per cent healed, and all that remained were two small dry, scaling patches, one on each thenar eminence. He has remained free of all dermatitis for one month following the complete elimination from his diet of pork, bread, butter, eggs, cheese, chocolate and lemonade.

3. *The Food Diary.*—The third method of determining food allergies is by the use of a food diary. It is applicable only in cases in which there is a more or less chronic eczematoid dermatitis with mild acute exacerbations once or twice a week. The patient keeps an accurate account of every food eaten during the day, both at meals and between meals. After the daily list of foods he records the condition of the skin—"improved," "no change," "worse," "itching," "new vesicles," "weeping" or "new patches." The time of each flare-up is recorded. After the record is kept for two or three weeks, the days of the flare-ups are noted and special attention is given to foods that appear on the list the day before and early in the same day. Certain foods which stand out as possible factors are eliminated from the diet, and after sufficient improvement they are tested by adding one of the foods at intervals of three days.

The following case illustrates this method.

CASE 4 (13 in table).—The patient was admitted to the hospital with several slowly healing leech bites on the lower extremities. After considerable local treatment and excision of one of the fragile scars on the left leg in the middle

part of the shin, the patient suddenly noted a patch of eczematoid dermatitis on the lateral aspect of the left ankle. This was followed in about one week by an eczematous eruption in the groin and the perineum. A variety of local treatments for two weeks produced only slight improvement. It was noted that the dermatitis was of a subacute variety with a low degree of activity but would become acute once or twice a week. The patient was told to keep a diary of the food eaten at breakfast, dinner and supper, which is as follows:

April 6 B: Coffee — Skin unchanged
D: Beef, cabbage, string beans, applesauce
S: Beef, potatoes, corn, peaches, coffee

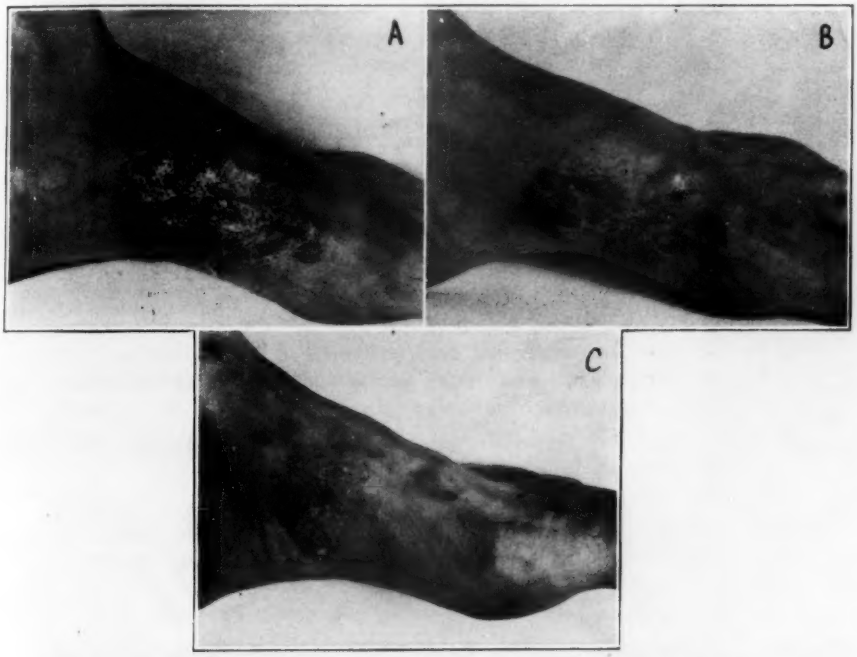

Fig. 3 (case 10).—*A*, the appearance of eczematoid dermatitis of the medial aspect of the foot on May 22, 1945. *B*, an immediate improvement three days after the start of the trial diet. *C*, an acute flare-up of the dermatitis twenty-four hours after string beans were eaten on June 2, 1945. Note the crusted appearance at the posterior portion of the lesion and the new vesicles on the anterior section.

April 7 B: Coffee — Skin unchanged
D: Beef, tea, vanilla pudding, peas
S: Chicken, potatoes, coffee, beets, jello

April 8 B: Prunes, oatmeal, beef, coffee — Skin unchanged
D: No food
S: Beef, potatoes, carrots, figs, lettuce

April 9	B: Corn flakes, chicken, coffee, applesauce D: Beef, potatoes, beets, pineapple, coffee, cabbage S: Chicken, peas, rice, fruit salad	Area enlarged; more itching; no weeping—4 p.m.
April 10	B: Bacon, fried potatoes, coffee, grapefruit D: Corned beef, Spam, potatoes, coffee, peaches, cabbage S: Beef, potatoes, asparagus, fruit salad, coffee	Flare-up still apparent
April 11	B: Corn flakes, bacon, prunes, grapefruit, coffee D: Pork sausage, beans, beets, peas, tea, peaches S: Chicken, peas, potatoes, applesauce, milk	New patch; flare in old ones—3 p.m.
April 12	B: Rice Krispies, prunes, coffee, potatoes D: Chicken, potatoes, carrots, coffee, pears, peaches, lettuce S: Beef, asparagus, potatoes, butterscotch pudding, coffee	Itching—12 noon Weeping—3 p.m.
April 13	B: Oatmeal, corned beef hash, coffee, applesauce D: Roast beef, potato soup, rice, pears, milk, butterscotch pudding S: Chicken, potatoes, string beans, fruit jello, coffee	Flare subsiding
April 14	B: Corn flakes, pears, potatoes, coffee D: Tuna fish, applesauce, lettuce, potatoes, carrots S: Beef, potatoes, fruit cocktail, corn, coffee	Weeping of all patches—2:30 p.m.
April 15	B: Rice Krispies, coffee, grapefruit D: Pork sausage, peas, pears, potato salad, tea S: Chicken, beets, fruit salad	Weeping worse; patches longer
April 16	B: Rice Krispies, coffee, prunes D: Potatoes, beef, peaches, coffee, asparagus S: Beef, potatoes, peaches, corn, coffee	Weeping greater
April 17	B: Rice Krispies, coffee, prunes D: Vienna sausage, kidney beans, carrots, milk, peaches S: Chicken, potatoes, peas, coffee, pineapple	No change; still weeping

The diary had been carried on for ten days, with four definite exacerbations, starting on the afternoon of April 9. There was some improvement on April 10 with a flare-up on April 11 and a continuation on April 12. On April 13 there was some improvement, but on April 14, 15 and 16 the patient suffered a prolonged flare-up, with vesiculation, increase in the size of the lesions and weeping. From a review of the record different foods stood out as possible factors. On April 9 and 10 the foods were corn flakes, rice, grapefruit, pork (bacon and Spam). On April 11 and 12 corn flakes appeared for the second time, as also did pork and rice (Rice Krispies). On April 14, 15 and 16 the following foods were suspected: corn, corn flakes, tuna fish, Rice Krispies, grapefruit and pork. Thus the following foods were eliminated from the diet: grapefruit, corn, rice, pork and tuna fish. The diary was continued.

April 18	B: Coffee D: Beef, cabbage, string beans, applesauce S: Chicken, potatoes, coffee, beets, jello	Improved

April 19	B:	Creamed beef, applesauce, coffee	Improved
	D:	Beef, pears, potatoes, lettuce, beets	
	S:	Beef, vanilla pudding, potatoes, peas	
April 20	B:	Corned beef hash, applesauce, coffee	Improved
	D:	Salmon, potatoes, string beans, milk, peaches	
	S:	Chicken, carrots, potatoes, milk, applesauce	
April 21	B:	Prunes, coffee	Much improved
	D:	Beef, pears, potatoes, applesauce, milk	
	S:	Beef, beets, potatoes, fruit jello, coffee	
April 22	B:	Beef, peaches, coffee	Improved
	D:	Beef, potatoes, string beans, fruit salad, tea	
	S:	Chicken, potatoes, lima beans, coffee, peaches	
April 23	B:	Beef, pears, coffee	Improved
	D:	Chicken, pears, potatoes, fruit salad, lettuce	
	S:	Beef, carrots, potatoes, pears, lettuce	

After this improvement it was decided to test the patient with the suspected foods previously eliminated. After eating bacon and pork sausage for several days, he suffered no flare-up. At intervals of three to four days other foods were tested, and he had a reaction to rice, corn and grapefruit juice but none to tuna fish. By his remaining on a diet eliminating corn, rice, grapefruit and chocolate (the patient knew that he was sensitive to chocolate by previous experience), his skin gradually improved and has remained well.

This case is an example of the determination of food allergens by the food diary. Such a method is easy to carry out and works especially well in cases in which the patients have noted definite flare-ups once or twice a week. Such a plan can be carried out on an outpatient basis with the soldier on full duty.

COMMENT

We have studied a total of 50 patients with eczematoid dermatitis in which food sensitivity was of primary etiologic importance. The 13 reported on in this paper are those whose records are available to us and whose studies have been completed.

We have no data to determine the proportion of cases of eczematoid dermatitis in which food sensitivity is the primary etiologic factor. It is our impression, however, that similar eruptions not responding to usual therapy (except roentgen irradiation) in three or four weeks have a definite food allergy factor.

Failure to recognize the primary importance of food allergy in these cases in the past has been due to a number of causes. 1. Cutaneous testing is not dependable. The only way to discover the offending foods is to test them by ingestion under careful supervision. 2. Prompt temporary improvement with roentgen ray therapy leads one to use this easy means of satisfying the patient. 3. The condition may be thoroughly disguised when first seen. Some patients have a superimposed pyogenic infection. The fundamental allergic factor cannot be discovered until

the superimposed picture is cleared. Local application of potassium permanganate soaks, débridement, use of weak ammoniated mercury ointment, sulfonamide compounds given internally and penicillin administered intramuscularly have been the best methods of accomplishing this. Some patients come into the hospital with superimposed dermatophytosis, which

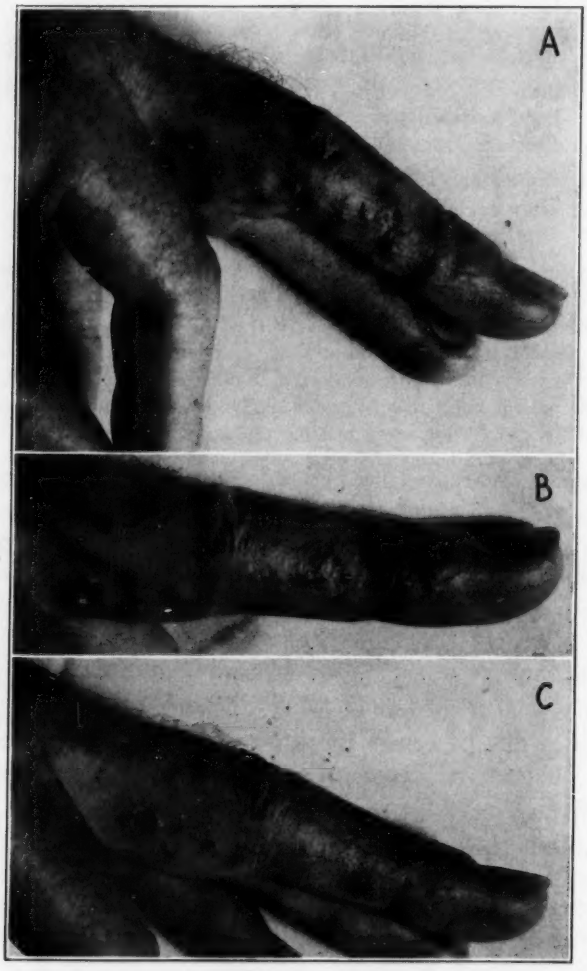

Fig. 4 (case 9).—*A*, an acute vesicular flare-up twelve hours after pork was ingested. Prior to this the finger showed only some residual scaling.

B and *C*, subsiding of the flare in twenty-four and forty-eight hours. Note the disappearance of the tense vesicles and erythema and the general drying and scaling of the skin in twenty-four and forty-eight hours.

must be eliminated before a procedure can be adopted. 4. Food sensitivity, like every other allergy, is a complicated response which may vary from time to time, depending on fatigue, emotional states and cumulative

effects of many allergens. Moreover, new sensitivities may develop which complicate the picture.

Thus there are many pitfalls in the path of the sleuth who is on the trail of the malefactors. The process of following the clues and arriving at a complete understanding of the case takes a good deal of time. There

Foods Which Have Caused Exacerbations of Dermatitis

Food	Case No.												
	1	2	3	4	5	6	7	8	9	10	11	12	13
Potatoes	..	..	..	..	..	+	..	..	..	..	..	..	..
Beef	..	..	..	..	..	..	..	..	..	..	..	..	..
String beans	..	..	+	..	+	..	..	..	..	+	..	..	..
Coffee	..	..	..	..	..	..	..	..	..	..	..	+	..
Milk	..	..	+	+	..	+	+	..	..	..	..	..	..
Butter	..	+	..	..	..	+	..	+	..	..	..	..	..
Bread	+	+	..	..	..	+	..	+	..	..	..	..	..
Corn	..	..	..	..	..	..	..	..	..	..	..	..	+
Peaches	+	..	..	..	..	..	..	..	+	+	..	..	..
Cream of Wheat	+	+	..	..	..	+	..	+	..	..	..	..	..
Tea	..	..	..	..	..	..	..	..	..	..	..	..	..
Chicken	..	..	..	..	..	..	..	..	..	..	..	..	..
Eggs	+	..	+	..	+	+	..	+	..	+	..	..	..
Spinach	..	..	+	..	..	..	..	..	..	..	..	..	..
Rice	+	..	..	..	..	..	..	..	..	..	..	..	+
Orange juice	..	..	..	..	+	..	..	..	..	..	..	..	..
Pineapple and pineapple juice	+	..	+	..	+	..	+	..	..	..	..	..	..
Peas	+	+	..	..	..	..	..	..	..	..	..	..	..
Tuna fish	..	+	..	..	+	+	..	..	+	..	..	..	..
Cabbage	..	..	..	..	..	..	..	+	..	..	..	..	..
Oatmeal	..	..	..	..	..	..	..	..	..	..	..	..	..
Tomatoes and tomato juice	..	+	+	..	+	..	..	..	+	+	..	..	..
Beets	+	..	..	..	+	..	+	..	..	..	..	..	..
Cheese	+	..	+	..	+	..	+	+	+	..	..	..	..
Cucumbers	..	..	+	+	..	..	..	n.t.	n.t.	n.t.	..	..	..
Pork	+	..	..	..	+	+	+	+	+	+	..	..	..
Salmon	..	..	..	..	..	..	..	..	..	..	..	..	..
Peanut butter	..	..	..	+	..	..	n.t.	+	..	..	..	..	..
Applesauce	..	..	..	+	..	..	..	..	..	..	..	..	..
Grapefruit and grapefruit juice	..	..	..	..	+	..	..	..	..	..	..	..	+
Prunes	..	..	..	..	..	..	..	n.t.	n.t.	n.t.	..	..	..
Cherries	..	..	..	..	..	..	..	..	..	n.t.	..	..	..
Asparagus	..	+	+	+	+	+	n.t.	n.t.	..	..	..	..	..
Baked beans	..	+	+	..	+	..	..	..	..	n.t.	..	..	..
Onions	..	..	..	..	..	..	..	n.t.	n.t.	n.t.	..	..	..
Carrots	..	..	..	..	..	..	..	..	..	..	..	..	..
Sauerkraut	..	..	..	..	..	..	n.t.	..	..	n.t.	..	..	..
Pears	..	..	..	..	..	..	..	..	..	..	..	..	..
Chocolate	..	..	..	..	..	+	+	+	+	..	..	..	+
Raisins	..	..	..	..	..	..	..	..	..	n.t.	..	..	..
Lemonade	..	..	..	..	+	..	..	+	..	..	..	..	..
Beer	n.t.	n.t.	n.t.	n.t.	n.t.	n.t.	n.t.	n.t.	n.t.	n.t.	+	n.t.	n.t.
Sweet potatoes	..	..	..	..	..	..	..	..	..	..	..	..	..
Lettuce	..	..	..	..	..	..	..	..	..	..	..	..	..

The abbreviation "n.t." indicates "not tested."

is no short cut. Roentgen ray therapy should not be used except for the residual changes after the allergens have been detected.

However, when the methods which we have outlined are followed the results are striking. Exacerbations usually occur within twelve hours, and always within twenty-four hours, after the patient has eaten an offending food. The mild reactions clear in thirty-six hours; the severer flare-ups accompanied with weeping of the patch subside within

four days. The food factors can be recognized by the relatively rapid improvement which follows their elimination and by the prompt exacerbation which follows their ingestion. The photographs (figs. 1, 2, 3 and 4) show the changes which occur.

There is a considerable likelihood that a larger series of cases will demonstrate that certain foods, particularly pork, cheese, eggs, wheat, and milk, are common offenders and that certain others, such as potatoes, beef, corn, tea and chicken, are less frequently responsible for eczematoid dermatitis. The table shows the wide varieties of foodstuffs which have been demonstrated to cause unmistakable exacerbations of eczematoid dermatitis in our 13 cases. None of the patients whose data are given in this table were sensitive to beef, chicken, oatmeal, tea and carrots. Yet at the present time we have patients who are undergoing testing who have reacted definitely to each of these substances. Further study may well show that there is no food to which some patient will not be sensitive. Consequently, each food must be tested methodically to secure results.[4]

SUMMARY

In 13 cases of eczematoid dermatitis food sensitivity was demonstrated to be the primary etiologic factor.

The most satisfactory method of discovering the offending foods is by careful trial diets.

Exacerbation and remission of the lesions follow promptly on administration and elimination of allergenic foods, so that the results of testing can be evaluated readily.

Pyogenic and trichophytic infections are often superimposed on the underlying food sensitivity dermatitis. They must be recognized and eliminated before food testing can be interpreted.

There is probably no food which can be accepted as incapable of producing eczematoid dermatitis. All must be tested methodically to secure results.

During the preparation of the manuscript, valuable suggestions were rendered by Col. Francis Wood, Medical Corps, Army of the United States.

4. Adequate survey of the literature was not possible, since this work was done in an overseas theater. A more complete review of the literature appears in a second article (Flood, J. M., and Perry, D. J.: Recurrent Vesicular Eruption of the Hands Due to Food Allergy, J. Invest. Dermat. **7**:309-327 [Dec.] 1946).

BASAL SQUAMOUS CELL EPITHELIOMA ASSOCIATED WITH LEUKEMIA

FREDERICK REISS, M.D.
Associate Attending Dermatologist, Montefiore Hospital
AND
WLADIMIR KONHEIM, M.D.
Adjunct, Montefiore Hospital
NEW YORK

THE FIRST authentic case of the simultaneous occurrence of malignant disease and leukemia was described by Whipham in 1878. A total of 21 cases of combined leukemia and malignant growths had been reported up to 1944, according to Morrison, Feldman and Samwick.[1] All the malignant growths involved internal organs except those in the cases of Fuhs,[2] Scheuffler [3] and Schreiner and Wehr,[4] who described epitheliomas of the skin. While Schreiner and Wehr described a case of epithelioma of the ear, associated with chronic lymphatic leukemia, originating on a normal skin, the epitheliomas described by Fuhs and Scheuffler developed on a leukemid. Besides these reports, Schreiner and Wehr had, among 11,212 cases of malignant disease, an additional 4 cases. Since the association of leukemia with malignant growth, particularly the combination with cancer of the skin, is rare, we deemed it to be of sufficient interest to report the following case.

REPORT OF A CASE

A. N., a white woman aged 61 years, was admitted in November 1944 to the Montefiore Hospital, with generalized lymphadenopathy. This had begun about two years previously, when she noticed a painless swelling of the posterior and anterior cervical glands. This was followed by a gradual enlargement of the axillary, epitrochlear and inguinal lymph nodes. About three years previously a small pustule appeared around the outer margin of the right eyebrow. Two similar lesions developed later, one below the right mandible and another on the right

From the Department of Dermatology, Montefiore Hospital, service of Dr. Fred Wise.

1. Morrison, M.; Feldman, F., and Samwick, A. A.: Carcinoma and Leukemia: Report of Two Cases with Combined Lesions; Review of Literature, Ann. Int. Med. **20**:75, 1944.

2. Fuhs, H.: Multizentrisches Basalzellenepitheliom bei lymphatischer Leukemie, Dermat. Wchnschr. **85**:1533, 1927.

3. Scheuffler, A.: Carcinombildung auf einem Leukämid, Arch. f. Dermat. u. Syph. **168**:586, 1933.

4. Schreiner, B. F., and Wehr, W. H.: Cancer Associated with Leukemia, Am. J. Cancer **21**:368, 1934.

side of the neck. All these lesions discharged, became crusted and refused to heal. Prior to admission the patient received, on account of severe anemia, several blood transfusions. On admission, Nov. 28, 1944, the patient revealed a generalized, discrete enlargement of lymph nodes. Bordering the outer margin of the

Fig. 1.—Epitheliomatous lesions on the outer border of the right eyebrow and right side of the neck.

right eyebrow, there was an oval, flat, slightly infiltrated, eroded and crusted lesion, the border of which was slightly raised. Similar, but smaller, lesions were present above the lower mandibular margin on the right side and about in the center of the neck, corresponding to the lateral border of the sternocleidomastoid muscle.

Blood Cell Counts in the Case Reported

Date	Hemoglobin, Gm.	Red Blood Cells	Leukocytes	Polymorphonuclears, %	Lymphoblasts, %	Lymphocytes, %
11/29/44	5.2	1,520,000	22,800	2	26	72
12/ 4/44	8.2	3,050,000	25,300	8	25	67
12/13/44	9.2	3,410,000	23,000			
12/18/44	10.5	3,800,000	28,000			
1/ 1/45	10.2	3,890,000	6,400	8	3	89
1/15/45	8.8	2,900,000	2,850		3	90
1/20/45	9.5	3,400,000	2,150			

The heart and lungs were essentially normal. Except for a moderate enlargement of the spleen, the abdomen did not disclose any abnormalities.

The blood cell counts in this case are given in the table.

Sternal puncture disclosed the following division of cells: myeloblasts 0.25 per cent, promyeloblasts 0.25 per cent, neutrophil myelocytes 4 per cent, nonsegmented neutrophils 1.75 per cent, segmented neutrophils 0.75 per cent, total myeloid series 7 per cent, lymphoblasts 92.25 per cent and normoblasts 0.75 per cent.

The patient received several blood transfusions, which caused temporary improvement in her blood picture. During the course of these hematologic examinations high voltage roentgen ray treatment was given to the entire body, which accounts for the depression of the leukocyte count.

Fig. 2.—Basal-prickle cell epithelioma with horny pearl formation.

A biopsy specimen of the cervical lymph node showed complete obliteration of the normal cellular architecture by a diffuse overgrowth of closely packed lymphocytes. The capsule was also invaded. These changes are compatible with malignant lymphatic lymphoma. The histopathologic changes in the section of one of the eroded lesions were as follows: In the corium beneath a superficially ulcerated epidermis there were many irregular, branching and anastomosing masses of epidermoid cells. These were fairly large, polyhedral and spindle shaped in the center and frequently columnar at the periphery. They had large vesicular and hyperchromatic nuclei, occasionally with large nucleoli. A few mitotic figures

were seen. Though a few pearls were present, the growth was essentially of the basal cell type; it originated, in many places, from the basal cells. There were considerable fibrosis in the corium, edema and hemorrhage. In addition to the carcinomatous process, a dense infiltration of lymphocytes in the corium and subcutaneous tissue which surrounded the carcinomatous tissue cells was present. While in one spot of the section indication was present of a possible relationship of this tumor with a lanugo hair, the invasive character, the size and the clinical character of the lesions were rather characteristic of a basal-spindle cell epithelioma of the skin with lymphocytic infiltration.

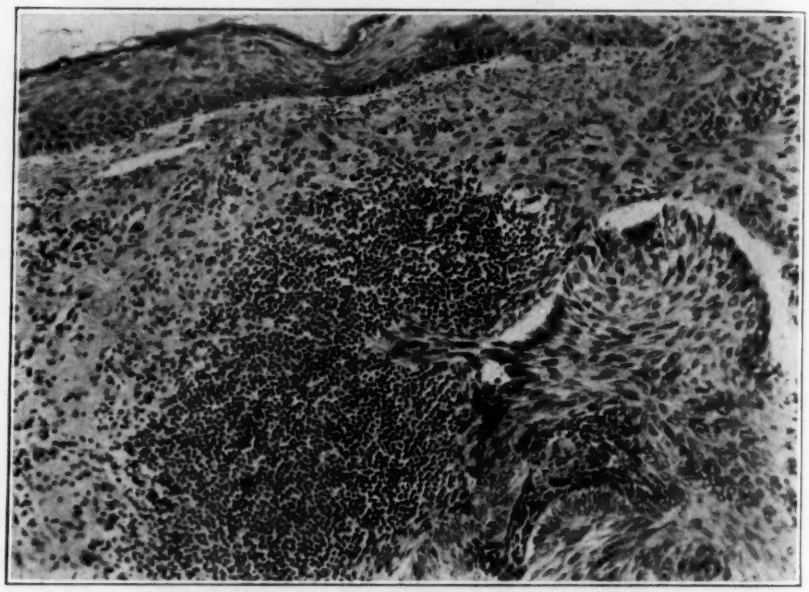

Fig. 3.—Dense lymphocytic infiltration adjacent to the epitheliomatous proliferation

COMMENT

While the incidence of leukemia is not uncommon, the association with carcinoma belongs to the rarities. If one assumes that past observations are correct, a histogenetic relationship between leukemia and carcinoma does not appear probable. The circumstances concerning the relationship between leukemia and sarcoma, which may exist, have a different significance. It seems probable that both diseases are the exteriorization of the same virus. Sternberg [5] was the first who drew our attention to such cases, and he called it "leukosarcomatosis." On the basis of the experiments carried out by Oberling and Guérin,[6] it

5. Sternberg, C.: Zur Kenntniss des Chloroms, Beitr. z. path. Anat. u. z. allg. Path. **37**:437, 1905.

6. Oberling, C., and Guérin, M.: Les rapports entre leucémie et cancer à la lumières de recherches expérimentales récentes, Paris méd. **1**:239, 1934.

does not seem impossible that a histogenetic relationship between leukemia and carcinoma may exist. These authors observed that the virus of chicken leukemia, after several passages through animals, may produce at the site of inoculation various types of tumors, such as spindle cell sarcoma, mycosis fungoides type of tumor or Rous sarcoma, and at times a prickle cell epithelioma may develop at the borders of a sarcoma. On the basis of their experiments, Oberling and Guérin refuted the hypothesis that the combination of sarcoma and epithelioma is coincidental, since they have succeeded in developing, in 2 instances, chicken epithelioma and sarcoma adjacent to each other from the leukemia virus. From such scanty evidence, it is too early to apply these observations to the histogenesis of human carcinoma from leukemia. It may, however, be of interest to devote future attention to such a remote possibility.

SUMMARY

1. A brief review of reported cases of cutaneous epithelioma and leukemia is given.

2. A case of a basal-prickle cell epithelioma of the skin in a woman with chronic lymphatic leukemia is presented.

816 Fifth Avenue.
133 East Fifty-Eighth Street.

USE OF TRICHOPHYTIN IN THROMBOANGIITIS OBLITERANS

JOHN C. HOLMAN Jr., M.D.
SAN DIEGO, CALIF.

THE RELATIONSHIP of trichophytosis and peripheral vascular disease has been discussed by various authors.[1] Studies [1a] were made which showed that a high percentage (93 per cent) of patients with thromboangiitis obliterans had clinical trichophytosis while only 73 per cent of the controls had clinical trichophytosis. Naide [1a] showed that four times as many patients with thromboangiitis obliterans gave positive cutaneous reactions to trichophytin as those without the disorder. Migratory phlebitis as a result of trichophytosis is well known, and "vascular trichophytids" [2] are also recognized.

As far as I can find, the use of trichophytin in the treatment of thromboangiitis obliterans or migratory phlebitis has not been carried on to any extent. During the last year, I have seen 2 patients with thromboangiitis obliterans whose response following the use of trichophytin was so dramatic that I feel that some attention should be given again to the possibility of the use of trichophytin as a therapeutic agent in this disease.

REPORT OF CASES

CASE 1.—Mr. I. H., a Jewish man aged 36, who had had typical thromboangiitis obliterans for six years, was seen March 15, 1945 because of severe urticaria. In addition to the urticaria, he had a vesicular eruption on the hands and some scaling between the toes. He was given 2 per cent iodine crystals in benzene to use on the feet. Because of the possibility of a trichophytid, I made a trichophytin test. In forty-eight hours he reported an erythematous, edematous reaction about 5 by 8 cm. and tender. I saw him again on March 18, 1945. The urticaria was about the same, but he remarked, "I don't know what you did to me the other day, but my feet are warm and comfortable for the first time in three or four years." The urticaria became so severe and the patient so mentally upset that he was hospitalized for about three weeks. In the meantime, the urticaria was controlled and the patient returned to work.

In July 1945 he had a recurrence of the symptoms of thromboangiitis obliterans and returned to his internist. He was sent to a surgeon for an examination for

1. (*a*) Naide, M.: The Causative Relationship of Dermatophytosis to Thromboangiitis Obliterans, Am. J. M. Sc. **202**:822 (Dec.) 1941. (*b*) Thompson, K. W.: The Relationship of Dermatomycoses to Certain Peripheral Vascular Infections, Internat. Clin. **2**:156 (June) 1941.

2. Peck, I.: Symposium on Allergic Dermatoses, J. Allergy **11**:308 (March) 1940.

possible surgical intervention to relieve his symptoms. The surgeon did not feel that operation was indicated. At the suggestion of the surgeon and the internist the patient returned to me, and I gave him trichophytin in a dilution of 1:240 once a week for four weeks and than trichophytin 1:120 once a week for four weeks. He was relieved of all symptoms of thromboangiitis obliterans after the second week of treatment, and he has remained so.

CASE 2.—Mr. F. W., aged 46, came to me Sept. 13, 1945, complaining of a scaling, vesicular eruption on the hands of six months' duration. In addition, he said that he had had thromboangiitis obliterans for about four years and that during the last year had been unable to walk without a cane because of the severe pain in his legs. His feet had been constantly cold, and the great toe on his right foot had been exceedingly painful. He had received various types of treatment for the thromboangiitis obliterans, without any appreciable relief.

I made a trichophytin test, using trichophytin in a dilution of 1:30, and after forty-eight hours he reported the presence of a wheal the size of a silver dollar. He was seen on Sept. 20, 1945. At this time he walked in without a cane and reported that he had little pain in the leg. He has since been given trichophytin in a dilution of 1:240 once a week, and now he is completely free of all pain. Only a slight discoloration of the toes appears when the feet are in a dependent position.

SUMMARY

Two patients with a trichophytid of the hands and thromboangiitis obliterans were seen. These patients had clinical trichophytosis, the treatment of which had not influenced the vascular lesions. One patient (I. H.) had treated his feet from April to July, and they were clinically free of all infection; yet the symptoms of the thromboangiitis obliterans were not affected. These patients were treated with trichophytin. The improvement both objective and subjective was rapid and decided. It is suggested that, in some patients with thromboangiitis obliterans, at least part of the inflammatory mechanism is initiated by an allergic reaction to the products of fungi and that trichophytin be given a more thorough trial as a therapeutic agent.

CARDIOLIPIN-LECITHIN ANTIGEN

Recent Development Toward a Single Standard Test of the Blood for Syphilis

B. S. KLINE, M.D.
CLEVELAND

ESSENTIALLY chemically pure cardiolipin-lecithin antigen, isolated by Pangborn and reported in 1941,[1] has been found to give more specific results in the microscopic slide precipitation test in nonsyphilitic patients than Eagle, Hinton, Kahn, Kline and Mazzini antigens and more sensitive results in patients with syphilis than Hinton, Kahn and Kline antigens.[2]

The excellent results obtained with cardiolipin-lecithin antigen and the great simplicity of the slide flocculation technic recommend the two as a base for a single standard test of the blood for syphilis worthy of universal adoption (fig. 1).

The simplification of technic from complex, time-consuming complement fixation tests for syphilis, requiring four reagents, to comparatively simple rapid flocculation tests, requiring but one, has been of great benefit to all concerned with the serodiagnosis of the disease.

The most recently developed flocculation tests for syphilis are based on a mixture of the ingredients on an open slide. The slide tests are easier to perform and to read accurately and are more economical of time, material and space than are the tube tests.

A measure of the interest in the slide flocculation tests is the fact that of thirty tests of the blood for syphilis evaluated at the recent Washington Serology Conference [3] twelve were slide flocculation tests. Nine of the tests evaluated were tube flocculation tests, and nine were complement fixation tests.

From the Laboratory Department, Mount Sinai Hospital.

Read before the Section on Dermatology and Syphilology at the Ninety-Fifth Annual Session of the American Medical Association, San Francisco, July 4, 1946.

1. Pangborn, M. C.: A New Serologically Active Phospholipid from Beef Heart, Proc. Soc. Exper. Biol. & Med. **48**:484, 1941; Isolation and Purification of a Serologically Active Phospholipid from Beef Heart, J. Biol. Chem. **143**:247, 1942; A Note on the Purification of Lecithin, ibid. **137**:545, 1941.

2. Kline, B. S.: Cardiolipin Antigen in the Microscopic Slide Precipitation Test for Syphilis, Am. J. Clin. Path. **16**:68, 1946.

3. Parran, T.; Hazen, H. H.; Mahoney, J. F.; Sanford, A. H.; Senear, F. E.; Simpson, W. M., and Vonderlehr, R. A.: The Washington Serology Conference, Ven. Dis. Inform. **23**:161, 1942.

More important in the development of a single standard test of the blood for syphilis than the simplification of technic is the improvement in the quality of the antigen employed. The original phenolized saline extracts of organs of a syphilitic fetus or child or other tissues containing Treponema pallidum, employed in 1906,[4] were quickly superseded by alcoholic extracts of normal organs.[5] For the past thirty-five years, purified alcoholic extracts (usually of beef heart powder previously treated with ether or acetone or ethereal or alcoholic extracts fractionated by acetone and dissolved in alcohol)[6] have demonstrated their superiority

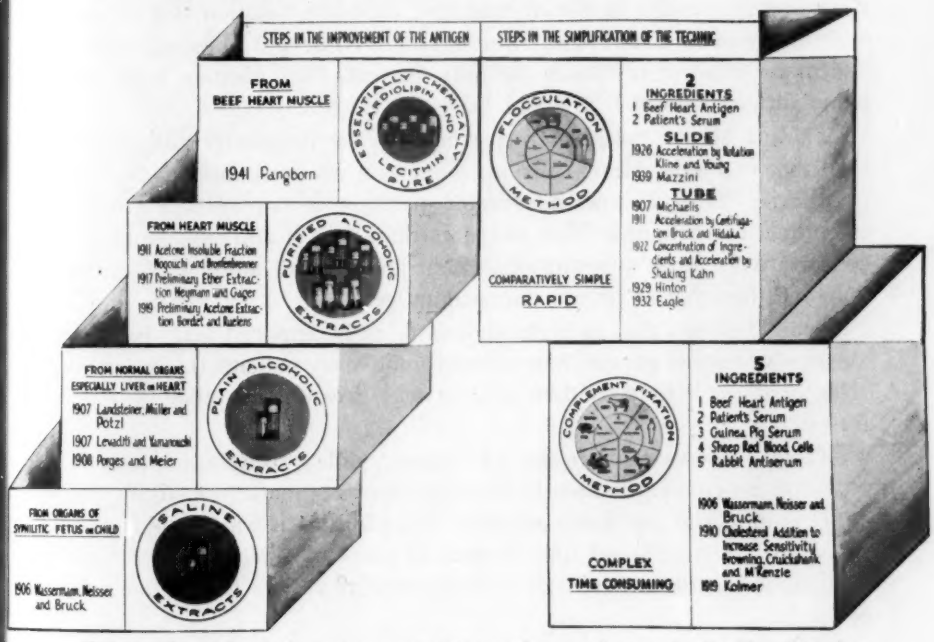
STEPS IN THE IMPROVEMENT OF THE ANTIGEN
STEPS IN THE SIMPLIFICATION OF THE TECHNIC
FROM BEEF HEART MUSCLE
1941 Pangborn
ESSENTIALLY CHEMICALLY PURE CARDIOLIPIN AND LECITHIN
FLOCCULATION METHOD
2 INGREDIENTS
1 Beef Heart Antigen
2 Patient's Serum
SLIDE
1926 Acceleration by Rotation Kline and Young
1939 Mazzini
TUBE
1907 Michaelis
1911 Acceleration by Centrifugation Bruck and Hidaka
1922 Concentration of Ingredients and Acceleration by Shaking Kahn
1929 Hinton
1932 Eagle
COMPARATIVELY SIMPLE
RAPID
FROM HEART MUSCLE
1911 Acetone Insoluble Fraction Noguchi and Bronfenbrenner
1917 Preliminary Ether Extraction Neymann and Gager
1919 Preliminary Acetone Extraction Bordet and Ruelens
PURIFIED ALCOHOLIC EXTRACTS
FROM NORMAL ORGANS ESPECIALLY LIVER or HEART
1907 Landsteiner, Müller and Potzl
1907 Levaditi and Yamanouchi
1908 Porges and Meier
PLAIN ALCOHOLIC EXTRACTS
COMPLEMENT FIXATION METHOD
5 INGREDIENTS
1 Beef Heart Antigen
2 Patient's Serum
3 Guinea Pig Serum
4 Sheep Red Blood Cells
5 Rabbit Antiserum
1906 Wassermann, Neisser and Bruck
1910 Cholesterol Addition to Increase Sensitivity Browning, Cruickshank and M'Kenzie
1919 Kolmer
COMPLEX
TIME CONSUMING
FROM ORGANS OF SYPHILITIC FETUS or CHILD
1906 Wassermann, Neisser and Bruck
SALINE EXTRACTS

Fig. 1.—Steps in the improvement of the antigen and steps in the simplification of the technic for testing blood for syphilis.

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4. von Wassermann, A.; Neisser, A., and Bruck, C.: Eine serodiagnostische Reaktion bei Syphilis, Deutsche med. Wchnschr. **32**:745, 1906.

5. Landsteiner, K.; Müller, R., and Pötzl, O.: Zur Frage der Komplementbindungsreaktionen bei Syphilis, Wien. klin. Wchnschr. **20**:1565, 1907. Levaditi, C., and Yamanouchi, T.: Le sero-diagnostic de la syphilis, Compt. rend. Soc. de biol. **63**:740, 1907. Porges, O., and Meier, G.: Ueber die Rolle der Lipoide bei der Wassermannschen Syphilis-Reaktion, Berl. klin. Wchnschr. **45**:731, 1908.

6. (*a*) Noguchi, H., and Bronfenbrenner, J.: Biochemical Studies on So-Called Syphilis Antigen, J. Exper. Med. **13**:43, 1911. (*b*) Neymann, C. A., and Gager, L. T.: A New Method for Making Wassermann Antigens from Normal Heart Tissue, J. Immunol. **2**:573, 1917. (*c*) Bordet, J., and Ruelens, G.: L'antigene syphilitique de l'Institut Pasteur à Bruxelles, Compt. rend. Soc. de biol. **82**:880, 1919. (*d*) Kline, B. S.: An Antigen for Use in Serum Tests for Syphilis, J. Lab. & Clin. Med. **13**:588, 1928.

over plain alcoholic extracts but nonetheless have been found to give nonspecific reactions, especially in cases of leprosy and malaria.

As previously stated, Pangborn in 1941 reported the isolation from beef heart muscle of a previously unknown lipid and named it cardiolipin. She found that certain mixtures of this lipid and purified lecithin acted well as an antigen in a complement fixation test for syphilis. Since then, several reports of the value of cardiolipin-lecithin antigen in complement fixation and flocculation tests for syphilis have appeared.[7]

In a recent study,[2] cardiolipin-lecithin antigen was found to give more specific results in the microscopic slide precipitation test in nonsyphilitic patients than Eagle, Hinton, Kahn, Kline and Mazzini antigens and more sensitive results in syphilitic patients than Hinton, Kahn and Kline antigen (tables 1, 2, 4 and 5 and fig. 2).

Table 1 shows the greater specificity of cardiolipin-lecithin antigen than that of Eagle, Hinton, Kahn, Kline and Mazzini antigens in cases of malaria. Table 2 shows the greater specificity in nonsyphilitic patients of optimal cardiolipin-lecithin mixtures than that of antigens containing comparatively large amounts of lecithin and a small amount of cardiolipin and than that of certain standard antigens.

Table 3 shows that in eight thousand, eight hundred and sixty-two consecutive tests of general hospital and ambulatory patients the specificity of optimal cardiolipin-lecithin antigen was greater than that of Kline antigen.

Table 4 shows that in the microscopic slide precipitation tests on syphilitic patients cardiolipin-lecithin antigen has greater sensitivity than the Hinton, Kahn and Kline antigens. In addition, it was found in tests of over six hundred and fifty serums in cases of syphilis that optimal cardiolipin-lecithin antigens gave more sensitive results than Kline antigen.

Figure 2 summarizes the comparative results of various cardiolipin-lecithin mixtures and Kline antigen in the microscopic slide precipitation test for syphilis and shows that mixtures of 1 part of cardiolipin and 9.4 and 10.6 parts of lecithin gave results of maximum specificity and of much greater sensitivity than did Kline antigen. In addition, it shows that mixtures of 1 part of cardiolipin and 11.7 or more parts

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7. Brown, R.: Cardiolipin, Lecithin, and Cholesterol in the Antigen in the Precipitation Test for Syphilis, J. Bact. **47**:581, 1944; Cardiolipin in Macro- and Microprecipitation Tests for Syphilis, ibid. **49**:199, 1945. Harris, A., and Portnoy, J.: Cardiolipin Antigens in the Kolmer Complement Fixation Test for Syphilis, Ven. Dis. Inform. **25**:353, 1944. Maltaner, E., and Maltaner, F.: The Standardization of Cardiolipin-Lecithin-Cholesterol Antigen in the Complement-Fixation Test for Syphilis, J. Bact. **49**:199, 1945. Rein, C. R., and Bossak, H. N.: Cardiolipin Antigens in the Serodiagnosis of Syphilis: Microflocculation Slide Test, Am. J. Syph., Gonor. & Ven. Dis. **30**:40, 1946.

TABLE 1.—*False Positive Reaction with Various Antigens in Cases of Malaria (Centrifuged Emulsions)*

	Negative Reaction	False Reactions ±	+	Total	Total Tests	Negative Reaction	False Reactions ±	+	Total	Total Tests	Negative Reaction	False Reactions ±	+	Total	Total Tests	Negative Reaction	False Reactions ±	+	Total	Total Tests	Negative Reaction	False Reactions ±	+	Total	Total Tests
Eagle	87	3	11	14	101	108	5	14	19	127															
Hinton	90	2	9	11	101	111	4	12	16	127	132	6	14	20	152										
Kahn	93	2	6	8	101																				
Kline	91	2	8	10	101	112	3	12	15	127	133	5	14	19	152	151	7	20	27	178	223	12	35	47	270
Mazzini	77	10	14	24	101	97	13	17	30	127	118	15	19	34	152	132	17	29	46	178					
Cardiolipin *	100	0	1	1	101	126	0	1	1	127	150	1	1	2	152	176	1	1	2	178	265	2	3	5	270

* The majority of tests were performed with a mixture of 1 part of cardiolipin to 10.6 parts of lecithin (optimal). All cardiolipin mixtures used gave more sensitive results in cases of syphilis than did Kline antigen.

TABLE 2.—*False Reactions in Slide Tests with Various Antigens in Nonsyphilitic Patients (Centrifuged Emulsions)*

	Room Temperature —	±	+	Total Tests	1 to 2 C. —	±	+	Total Tests	Room Temperature —	±	+	Total Tests	Room Temperature —	±	+	Total Tests
Eagle	50	0	0	50	36	1	1	38								
Hinton	49	1	0	50	37	1	0	38								
Kahn	50	0	0	50	38	0	0	38								
Kline	50	0	0	50	38	0	0	38	53	0	0	53				
Mazzini	49	0	1	50	34	3	1	38								
Pangborn, 1 (cardiolipin) : 9.4 (lecithin)	50	0	0	50	17	0	0	17	53	0	0	53	38	0	0	38
1 (cardiolipin) : 10.6 (lecithin)																
Pangborn, 1 (cardiolipin) : 21.1 (lecithin)	..	..	..	..	..	..	..	..	..	..	..	..	28	10	0	38
Pangborn, 1 (cardiolipin) : 25.8 (lecithin)	..	..	..	..	..	..	..	..	31	18	4	53	24	10	4	38

	Room Temperature * F.D.	C.D.	—, ±	Total	1 to 2 C. —	±	+	Total
Eagle								
Hinton								
Kahn								
Kline	..	..	..	..	108	0	0	108	99	1	0	100
Mazzini	..	..	..	..	103	2	3	108	86	10	4	100
Pangborn, 1 (cardiolipin) : 9.4 (lecithin)	80	0	0	80	90	0	0	90				
1 (cardiolipin) : 10.6 (lecithin)								
Pangborn, 1 (cardiolipin) : 21.1 (lecithin)	..	..	..	..	85	5	0	90				
Pangborn, 1 (cardiolipin) : 25.8 (lecithin)	51	23	6	80	86	2	2	90				

* F.D. indicates fine dispersion and C.D., coarse dispersion; —, ± indicates between — and ±.

of lecithin gave positive reactions in nonsyphilitic patients and are therefore unsatisfactory for use.

TABLE 3.—*Positive Reactions in Slide Tests with Cardiolipin-Lecithin and Kline Antigens in General Hospital and Ambulatory Patients with No Evidence of Syphilis*

Antigen	Total Tests (6/26/45 to 5/15/46)	Positive Reactions ± Weakly Positive	%	+ Positive	%
Cardiolipin-lecithin...	8,862 *	11 †	0.12	5 †	0.06
Kline.....	8,862 *	30	0.34	27	0.30

* Includes cases with data insufficient for evaluation.

† In 3 cases of uterine fibroids the reactions were weakly positive, and in 2 cases they were positive. Two patients with diabetes mellitus gave a weakly positive reaction, and 1 gave a positive reaction. In 2 cases of pregnancy the reactions were weakly positive and in 1 case positive. In 4 patients with other conditions the reactions were weakly positive; in 1 the reaction was positive.

TABLE 4.—*Sensitivity of Various Antigens* in Slide Tests in Cases of Syphilis*

There were twenty-one serums of low titer eliciting positive reactions with uncentrifuged emulsions; twenty-one serums of low titer elicited positive reactions with centrifuged emulsions.

	−	±	+	Total Tests
Eagle.....	0	4	37	41
Hinton.....	6	10	24	40
Kahn.....	8	15	18	41
Kline.....	16	16	9	41
Mazzini.....	0	5	36	41
Pangborn, 1 (cardiolipin) : 9.4 to 10.6 (lecithin).....	0	6	35	41

* The various antigens employed in preparing slide test emulsions with identical quantities of water, cholesterol and salt solution were used in the following optimal amounts: Mazzini, 0.075 cc.; Kline, 0.1 cc.; cardiolipin, 0.1 cc.; Eagle, 0.2 cc. to 0.25 cc.; Kahn, 0.25 cc. to 0.3 cc., and Hinton, 0.2 to 0.25 cc.

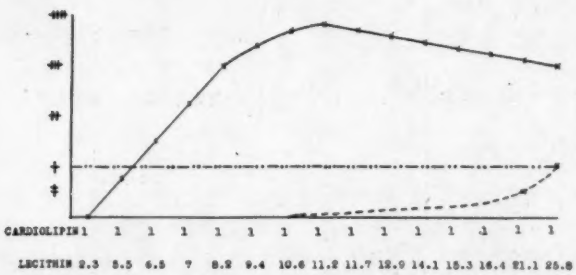

Fig. 2.—Sensitivity of the various mixtures of Pangborn cardiolipin and purified lecithin in slide tests as compared with that of standard slide test antigen on serums of low titer eliciting positive reactions (estimated on the basis of a 1 plus reaction in the standard diagnostic slide test). The continuous line indicates the specific reaction with uncentrifuged emulsions. The broken line indicates the nonspecific reaction with centrifuged emulsions. The broken line with dots indicates the reaction to the standard slide test with diagnostic emulsions.

That cardiolipin-lecithin antigen is not absolutely specific for syphilitic reagin is evidenced by the occurrence of occasional positive reactions in nonsyphilitic patients as shown in tables 1, 2 and 3, and in patients

Table 5.—*Reactions of Kline and Cardiolipin Antigens in Serums of Lower Animals (Centrifuged Emulsions)*

	Horse				Beef				Sheep				Hogs				Dogs †			
	−	±	+	Total Tests	−	±	+	Total Tests	−	±	+	Total Tests	−	±	+	Total Tests	−	±	+	Total Tests
Kline	0	0	20	20	0	0	25	25	1	3	21	25	14	10	26	50	8	2	2	12
Pangborn, 1 (cardiolipin) : 10.6 (lecithin)	1	1	18	20	14	4	7	25	14	3	8	25	27	3	20	50*	12	0	0	12
Pangborn, 1 (cardiolipin) : 25.8 (lecithin)	1	1	18	20	6	9	10	25	11	4	10	25								

* Cardiolipin antigens in tests of hog serums contained 1 (cardiolipin) : 6.5 (lecithin).

† The dog bloods were kindly furnished by Dr. H. Goldblatt, Institute of Pathology, Western Reserve University School of Medicine.

with leprosy, as reported by Rein.[7] It has been pointed out also that results with optimal cardiolipin-lecithin antigen are not always reliable in tests with uterine blood and blood from the cord and with merthiolated serum.[2] Furthermore, positive reactions occur in tests of cardiolipin-lecithin antigen with horse, beef, sheep and hog blood serum [2] (table 5).

In spite of these limitations of cardiolipin-lecithin antigen, the fact that it is composed of essentially chemically pure lipids makes it possible for the first time in the serodiagnosis of syphilis to obtain uniform results with lot after lot of antigen. Furthermore, the fact that cardiolipin-lecithin antigen in the microscopic slide precipitation test gives results of maximum sensitivity and at the same time more specific results than present day standard antigens indicates its great value in the serodiagnosis of syphilis and represents an important step toward the development of a single standard test of the blood for syphilis.

Future studies may reveal better methods of preparing antigen emulsions and better conditions for their use in a slide flocculation test than those employed today. Furthermore, an antigen more specific for syphilitic reagin than cardiolipin-lecithin antigen may be found.

SUMMARY

Essentially chemically pure cardiolipin-lecithin antigen, isolated by Pangborn and reported in 1941, has been found to give more specific results in the microscopic slide precipitation test in nonsyphilitic patients than Eagle, Hinton, Kahn, Kline and Mazzini antigens and more sensitive results in patients with syphilis than Hinton, Kahn and Kline antigens.

The excellent results obtained with cardiolipin-lecithin antigen and the great simplicity of the slide flocculation technic recommend the two as a base for a single standard test of the blood for syphilis worthy of universal adoption.

Mrs. H. Suessenguth and Miss M. Stephens gave technical assistance, and Mrs. Suessenguth gave valuable suggestions concerning the manuscript.

1800 East One Hundred and Fifth Street.

ABSTRACT OF DISCUSSION

DR. A. S. GIORDANO, South Bend, Ind.: I am grateful for the opportunity of being here to pay tribute to Dr. Kline for the contribution that he has made to the serology of syphilis. It was he, some ten years ago, that initiated the study of purifying antigen by precipitating out, so to speak, all the unspecific or nonspecific substances in the antigens that physicians were using. Today he is perhaps on the threshold to the realization of his dream.

About seven years ago, the American Society of Clinical Pathologists was convinced from his various studies that he presented that something should be

done to assist him in solving this problem. Accordingly, they appointed a committee to raise funds in order that well trained chemists could be obtained to complete this job. Today there is this new cardiolipin antigen that has performed as Dr. Kline has described.

In our laboratory, my colleagues and I are running parallel series of studies, and we wish to substantiate everything he has said. So far the specificity is far superior to that of tests now in use. We were particularly using the Mazzini test. In our work we found that this test, even though highly desirable and sensitive, gave an uncomfortably high number of nonspecific reactions. In the National Serologic Conferences, many types of serums are not studied. I refer particularly to those in obstetric cases, general sepsis and various other types of infection.

In this group of patients we found the highest number of nonspecific reactions, and it made it extremely difficult for us to keep in touch with physicians to warn them that such a test in all probability might be false and they must use caution.

In the use of cardiolipin, serologists have practically done away with these nonspecific reactions. As Dr. Kline thinks that there may be a better antigen, it may be true, but this one certainly, I believe, will replace all those that serologists have so far had opportunity to use.

DR. M. H. MERRILL, Berkeley, Calif.: Serologists are confronted with two basic problems. The first is the multiplicity of serologic tests for syphilis. The second is the varying levels of sensitivity and specificity from laboratory to laboratory of any given test procedure.

There are two basic serologic procedures—complement fixation and flocculation—and numerous applications of each of these. In California there are three hundred and five laboratories approved to do serologic tests for syphilis. A total of eight different tests are employed within these laboratories. As the problem is studied, varying degrees of deviations from the published procedures of the authors of these eight procedures are constantly being encountered, which multiplies the actual number of tests being used.

I mention these facts to indicate what an advance it might be if serologists could eventually arrive at a single easily standardized test procedure that would be used by all laboratories.

The second problem pertains to varying levels of sensitivity and specificity in any given test from laboratory to laboratory. It is in this category that it seems to me that the introduction of cardiolipin represents a real advance. For the first time it now appears to be within the grasp of serologists to have an antigen composed of pure chemical substances. Such an antigen can apparently actually be standardized without having to enclose the term in quotation marks. The development of this antigen may well remove one of the troublesome variables in serologic tests for syphilis. One is still, however, dealing with a delicately balanced biologic test. The purity of the salt solution, exact adjustment of salt concentration and purity of the alcohol used as the solvent are examples of other factors that must be considered. The greatest single variable heretofore has been the antigen itself. The essential control of the factor is therefore a genuine advance.

It must be recognized, however, that this antigen can be used in complement fixation tests as well as flocculation tests and also that it can be used in tube flocculation tests as well as slide microscopic flocculation tests. The battle of the tests will undoubtedly continue for some time even after cardiolipin antigen becomes readily available. Dr. Kline has clearly demonstrated, it seems to me, that this new antigen possesses distinct advantages when the Kline microscopic slide technic

is applied. The workers in the New York State Laboratory are, I believe, equally convinced that it provides similar advantages when used in the complement fixation test. Workers who have used cardiolipin antigen, regardless of the procedure of the test, are apparently in agreement concerning its superiority. Apparently science has moved forward another step in the development of the serologic testing for syphilis. It is not inconceivable that as soon as it becomes available this antigen may be generally adopted.

For a number of years my colleagues and I have been using the Kline exclusion test in our California state laboratory. We have recognized that this test, as all serologic tests for syphilis, has some limitations. We welcome Dr. Kline's report on the use of this new antigen in his test. This will go far toward correcting some of the problems we have encountered. I congratulate Dr. Kline on this new application of a test procedure we have found most adaptable to large scale testing. Nevertheless, we are hardly yet prepared to say that we can eliminate other test procedures, particularly the complement fixation test. We shall want to run comparative studies on a significant series of specimens before considering the elimination of the complement fixation test, particularly on spinal fluids, on serums in cases of prenatal syphilis and for quantitative reagin determinations. I say this, hoping, however, that in the not too distant future we may be able to rely on one test and that all other laboratories in the state may do likewise. Dr. Kline's procedure may be that test, but we can hardly say as much at this time.

Dr. R. C. Arnold: Pangborn has isolated the so-called cardiolipin in which the antigenic potential appears to be invested and which has been used in the preparation of antigens. Alone, cardiolipin has not been found to be suitable as an antigen in the present serodiagnostic technics; its reactivity must be enhanced by lecithin and cholesterol. It is difficult to prepare such complex organic compounds in a pure chemical state, and the contiguous substances may interfere with reproducible antigenic activity. At present the proportionate ratio of the essential antigen components needs adjustment from lot to lot. Future developments in isolation and purification of the components may obviate the need for serologic standardizations of cardiolipin antigens. The parallel control of all components cannot be overemphasized.

An optimum combination of these substances may be used for antigenic purposes in a slide and tube precipitation test and in a complement fixation test. The level of sensitivity appears to be equal to or better than that obtained with the cruder lipidal antigens. Also, some factors of nonspecificity may have been removed. The exact status of sensitivity and specificity will be determined by future laboratory and clinical evaluations.

Cardiolipin represents a definite advancement toward the ideal antigen for the serologic tests for syphilis and may well serve as the basis for the greatly needed standardization of serodiagnostic methods.

Research should be continued in the field of antigenic and supplementary substances so that the resulting antigens will be constant in character, reproducible in activity and adaptable to normal laboratory conditions. Consideration may be given toward the simplification and standardization of serologic tests to replace the numerous technical procedures, each of which now has multiple and ever-changing modifications.

In any discussion of serologic tests for syphilis, it is well to remember that the antigen, though of primary importance, is only one factor. Among others, the condition of the specimen, the other test reagents, the test technic and the method of performance all affect the results of the test. The indulgence and

cooperation of the physicians will be helpful during the laboratory and clinical evaluation of tests employing cardiolipin antigens, in the fields of both established syphilis and other diseases which may give nonspecific positive reactions.

Dr. Kline has arranged a most interesting display dramatizing the historical and educational highlights of his presentation. Either the display or the discussion would be sufficient to remind one of the rapid advances in scarcely forty years of serology in syphilis and to point, I believe, to even more rapid progress in the immediate future.

DR. GEORGE W. BINKLEY, Cleveland: Dr. Kline has shown a satisfactory decrease in the number of nonspecific reactions when the cardiolipin antigen is used. In eight thousand, eight hundred and sixty-two routine serums for testing from presumably healthy donors, the Kline exclusion test gave about thirty positive reactions while the cardiolipin test gave only eleven positive reactions. This means much less unnecessary investigation for clinicians, not to mention anxiety for the patients. With the previously employed flocculation tests, the Kline, Kahn, Hinton, Eagle and others, there was an almost uniform 16 per cent false positive incidence in serums from patients with active malaria. With the cardiolipin antigen only 1 per cent false positive reactions were obtained.

We will await with great interest the results of serologic tests in other infections, such as leprosy, lymphogranuloma venereum, postvaccinial infection and infectious mononucleosis, with the cardiolipin antigen.

I believe that Dr. Kline has not yet had the opportunity to make serologic tests in yaws, pinta or the spirochetal type of rat bite fever with this antigen. However, one should expect the cardiolipin to give positive results in these diseases because of the similarity of the reagin formed.

DR. CHARLES R. REIN, New York: Dr. Kline is to be congratulated on the successful adaptation of a cardiolipin antigen to his microscopic slide flocculation test. He has selected a ratio of cardiolipin and lecithin (1:10.2) which he found to be optimal for his test. Ad Harris and his collaborators have also employed a cardiolipin-lecithin antigen (ratio 1:9) in a microflocculation test, with similar excellent results. At the Army Medical School my colleagues and I have used the cardiolipin-lecithin antigens in a microflocculation test (ratio 1:65) and in a complement fixation test (ratio 1:5). The sensitivity of our tests with cardiolipin antigens is definitely higher than that obtained with similar tests employing the routine standard lipidal antigens. The specificity of these cardiolipin tests is also greatly improved, and it is especially evident in patients with malaria. Captain Kent and I presented a paper yesterday on our results in a series of volunteer nonsyphilitic prisoners with sporozoite-induced malaria. The unusual specificity of our cardiolipin microflocculation test in this group was striking.

Dr. Mary Pangborn has made a most important contribution to medicine in her discovery and isolation of cardiolipin. The use of this purified substance has enabled serologists to improve the sensitivity and specificity of their tests for syphilis.

It should be pointed out, however, that the cardiolipin tests also have definite limitations in that false positive and false negative reactions may be obtained with them. In a series of 35 patients with leprosy the incidence of nonspecific (false positive) reactions was just as high with cardiolipin tests as with the routine tests in our serologic battery. In a few nonsyphilitic patients with infectious mononucleosis, the reactions in the cardiolipin tests were the first to become positive and the last to become negative when compared with reactions in a battery

of six other tests. I am certain that when these cardiolipin antigens are more widely used other nonsyphilitic diseases and conditions will be found that will produce false positive reactions.

We have also had an opportunity to use cardiolipin tests in a series of blood specimens from patients with yaws and pinta. As was expected, we obtained a high percentage of strongly positive reactions.

CAPTAIN JOHN KENT, Washington, D. C.: It appears from these adaptations that the microflocculation, precipitation and complement fixation procedures require different proportions of cardiolipin, lecithin and cholesterol as antigen. However, the various modifications of each of these procedures require strikingly similar proportions of the constituents. This similarity suggests the ultimate use of a standard cardiolipin antigen, for example, in all microflocculation methods. Such standardization extended to precipitation and complement fixation tests would represent an important accomplishment, since it would make possible the evaluation of technics without consideration of antigen and permit perhaps the final selection of a single, optimal microflocculation, precipitation and complement fixation test from the many named variations in current use.

SULFONAMIDE PSORIASIFORM DERMATITIS

OSGOODE S. PHILPOTT, M.D.
DENVER

IT IS WELL known that members of the sulfonamide group of drugs may produce untoward cutaneous reactions. Further reference to this fact may seem unnecessary, but I have observed during the last few years a cutaneous eruption due, I think, to sulfonamide compounds and not, to my knowledge, previously reported. This is a type of psoriasiform dermatitis, exhibiting many of the essential features of psoriasis, and in at least 1 of 4 cases may be true psoriasis.

Costello, Rubinowitz and Landy [1] reported twenty-nine dermatoses attributed to the local or internal use of sulfathiazole, but in this group there is no mention of any resembling psoriasis. The literature, while rich in references to a wide variety of sulfonamide dermatoses, does not include any of the type I wish to report in this paper.

My first contact with this interesting condition was in 1941, when a woman was seen in my office with an eruption which was apparently psoriasis. There was nothing unusual about the appearance of the cutaneous lesions, but I was startled by Dr. Markley's statement that he thought that the woman's psoriasis was due to sulfanilamide. Subsequent investigation seemed to bear out this observation, but unfortunately I did not have the opportunity for further study of the case. Later, when I encountered similar lesions in patients who had recently received sulfonamide drugs, the idea of reporting them crystallized. The majority of my patients were women; some I followed for three or more years; a number were seen only once, having been patients referred from out of town for diagnosis. From the cases in which the conditions were so diagnosed, 3 are here reported as illustrating some of the clinical features common to the entire group.

REPORT OF CASES [2]

CASE 1.—N. D., a white woman aged 18, was referred to my office for diagnosis and treatment. At this visit she stated that she had been well until two weeks previously, when there had developed an illness consisting of headache,

Read before the Section on Dermatology and Syphilology at the Ninety-Fifth Annual Session of the American Medical Association, San Francisco, July 5, 1946.

1. Costello, M. J.; Rubinowitz, A. M., and Landy, S. E.: Sulfonamide Therapy in Dermatology, New York State J. Med. **42**:2309-2317 (Dec. 15) 1942.

2. From the private practice of Dr. A. J. Markley, Dr. O. S. Philpott and Dr. A. R. Woodburne.

fever, sore throat and generalized distress. Her physician prescribed 21 grains (1.5 Gm.) of sulfathiazole every three hours for three days. Feeling better, she returned to work, and within a few days she noticed a "breaking out of small pimples" on the elbows, knees and scalp. The eruption spread rapidly over the extensor surfaces of the extremities and on the forehead, extending downward to the eyebrows. When first examined, most of the lesions were maculopapular, bright red and small and covered with white, adherent, dry scales. A diagnosis of acute psoriasis was made. Routine treatment was instituted, including autohemotherapy. The number of lesions increased, and the older lesions became progressively more papular and in places confluent. The patient was then hospitalized.

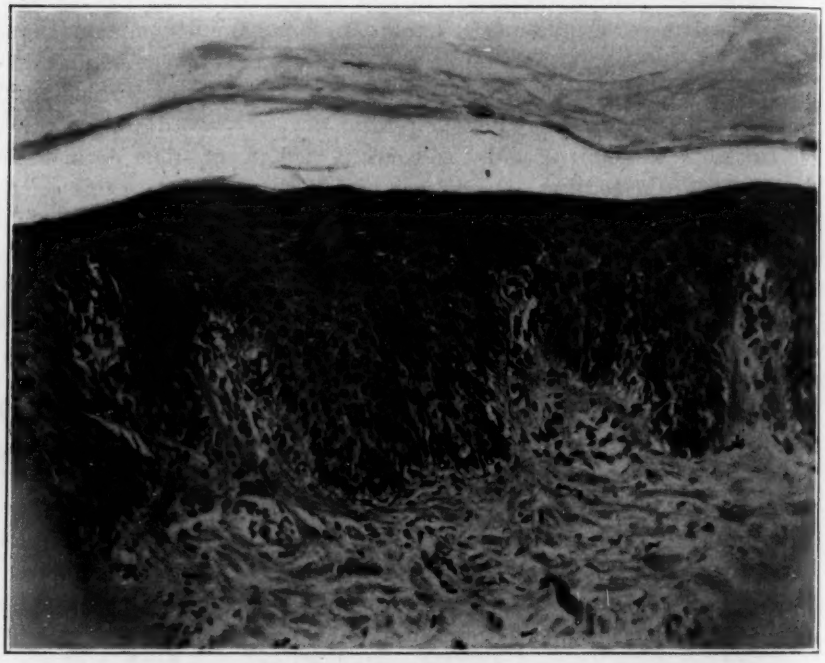

Fig. 1 (case 1).—Epidermal cellular and nuclear changes and dermal lymphocytic infiltration consistent with the lesions of psoriasis. × 90.

Hospital Digest.—Physical examination revealed a well nourished, well developed white woman appearing somewhat more mature than her stated age of 18. The skin revealed red, rounded, discrete, flat-topped papules, which were dry and usually covered by silvery scales. Where the lesions were thickest they tended to coalesce. They were found over the entire body and face, especially about the hair line, on the extensor surfaces of the arms and legs and about the elbows and knees. Wherever the patient had a scar on her body lesions developed.

Physical Examination.—Physical examination showed normality with the exception of the aforementioned cutaneous lesions and hypertrophied tonsils. A roentgenogram of the chest was normal. The urine and blood cell count were normal. Other laboratory examinations, including studies of blood chemistry, gave normal

results. The serologic reaction of the blood was negative. A small piece of skin was removed partially from a typical lesion and partially from the adjacent normal skin for histologic examination.

First Microscopic Examination (fig. 1).—Sections showed hyperkeratosis of the stratified squamous epithelium. The superficial cornified epithelium was thin and appeared shredded. The rete cones were elongated and broadened, with occasional formation of daughter rete pegs. The papillae were ballooned and in areas showed small collections of lymphocytes in the tips of the papillae. In the dermis were small collections of lymphocytes.

Pathologic Diagnosis.—The pathologic diagnosis was chronic dermatitis, with lesions consistent with psoriasis.

Therapy.—The patient received ultraviolet irradiation, petrolatum on the body and 10 per cent ammoniated mercury ointment on the scalp.

Diagnosis.—The patient was discharged, with the diagnosis of psoriasis, unimproved.

Course.—For the next few months the patient was treated at the office, and the eruption gradually improved until she was free of lesions on the glabrous skin. With the exception of scaling and redness on the scalp she remained clear for fifteen months, until she contracted an infection of the upper respiratory tract. During this sickness she noticed the appearance of small, red areas on both legs. These increased in size until many were 1 inch (2.5 cm.) or more in size and irregularly shaped. All were moderately infiltrated and scaly. A second biopsy was performed at this time.

Second Microscopic Examination.—Sections showed parakeratosis with desquamation of sheets of epithelium, often containing clear spaces. The papillary layer frequently approached the surface, was highly vascular and contained moderate numbers of lymphocytes. Lymphocytes were also prominent about the vessels in the deeper corium. A few of the epithelial cells of the prickle cell layer were vacuolated. The picture was suggestive of that seen in psoriasis but was not sufficiently so to make that diagnosis.

Diagnosis.—The diagnosis was chronic dermatitis.

Case 2.—M. W., a white woman aged 30, examined at my office, had a great number of lesions over the entire body. The size of the lesions varied from ⅛ inch to 2 inches (0.32 to 5 cm.). They were dull red, raised and scaly, with irregular outlines, but sharply marginated. On the elbows and knees were thick, discoid patches, resembling either lichen simplex chronicus or chronic psoriasis (figs. 2 and 3). The patient had had the eruption for about four months. The mucous membranes, palms and soles were not involved. There was no history of previous eruptions. There had been no psoriasis in her immediate forebears. She gave a history of an incident of "streptococcic infection" of the throat two months before I first examined her. She had taken sulfonamide drugs on several occasions, the last time being a few weeks before the eruption appeared. At this visit a diagnosis of chronic psoriasis (four months' duration) was made. Treatment was outlined and followed, without benefit. The patient was then hospitalized.

Hospital Digest.—This 30 year old white woman entered the hospital with a history of onset of eruption across the shoulders five months previously. These cutaneous lesions were small, painless and pruritic. The lesions over the shoulders cleared up after a few days but reappeared on the legs. The areas on the legs became larger. The chief complaint was pruritus. The areas bled fairly easily.

The lesions spread progressively, and by the time of the patient's admission they had involved most of the skin of the body. Seven days prior to admission the lesions began to spread to the face. Lesions of the skin appeared first as small, red, nontender papules, which enlarged and spread. The remainder of the history was noncontributory.

Physical Examination.—The temperature was 98.2 F., the pulse rate 84, the respiratory rate 20 and the blood pressure 122 systolic and 74 diastolic. The patient

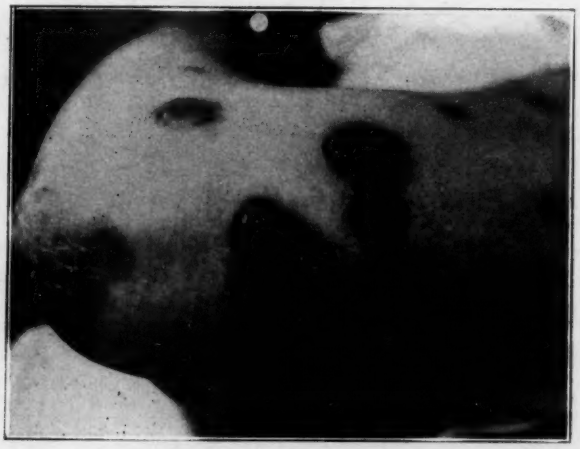

Fig. 2 (case 2).—Lesions on extensor surface of arm and elbow.

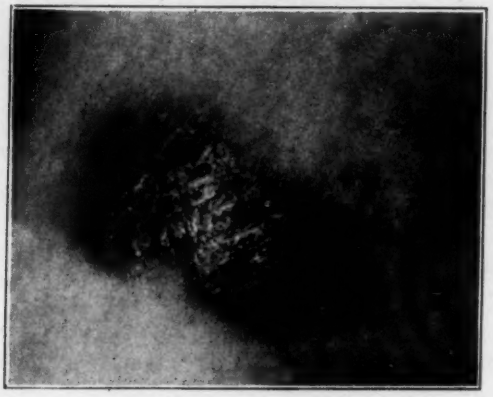

Fig. 3 (case 2).—Closer, more detailed, view of the lesion of psoriasis.

was a well developed, well nourished white woman, ambulatory and not in acute distress. The skin showed numerous widespread, dull red, well demarcated, circular, elevated, indurated, scaly lesions all over the body except for the hands and feet; the lesions varied from 2 or 3 mm. to 4 or 5 cm. in size. Several new small lesions were present on the face. The eyes, ears, nose and throat were essentially normal. The head and neck were normal except for cutaneous lesions. The lungs were clear to auscultation and percussion. The heart was

within normal limits. The abdomen was normal. The reflexes were physiologic. The impression was psoriasis.

Laboratory Findings.—The picture on hematologic examination was within normal limits except for a somewhat increased total white cell count, the differential count being essentially normal. The sedimentation rate was normal. The blood chemistry was normal.

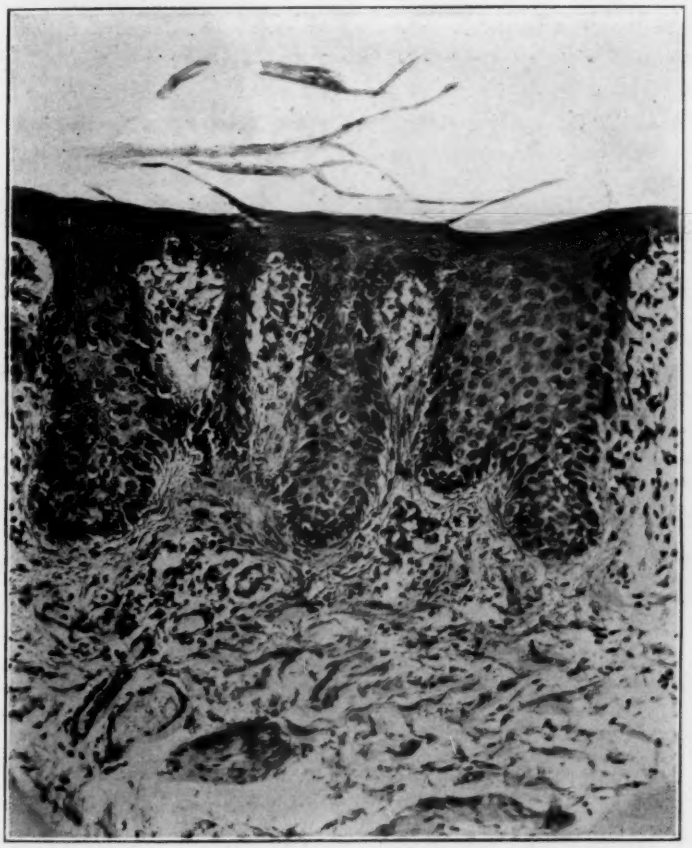

Fig. 4 (case 2).—This section shows parakeratosis and cellular degeneration in the rete cells with intercellular edema. × 90.

Microscopic Examination (fig. 4).—Sections showed the stratified squamous epithelium to be somewhat hyperplastic but otherwise normal. Just beneath the epithelium were areas of round cell infiltration.

Pathologic Diagnosis.—The pathologic diagnosis was chronic dermatitis. It was believed that the throat was the source of infection, and a consultation for examination of the throat was requested. The diagnosis from this was chronic tonsillitis, with a recommendation for tonsillectomy, which was done. The patient's condition following this was good. Treatment directed to the psoriatic lesions for the remainder of the patient's stay in the hospital was application of a 3 per cent

crude coal tar ointment at night and ultraviolet irradiation in the morning. Much improvement in the lesions was noted; there was a softening and loss of the scaly appearance. However, the lesions did not wholly disappear. The patient was dismissed.

Final Diagnosis.—The final diagnosis was psoriasis. The patient's condition was improved.

Following her episode in the hospital she had an occasional roentgen ray treatment. During the summer she followed a modified Goeckermann treatment, with indifferent results. Her elbows and knees have been continuously involved, although there were several weeks during the fall when the rest of her body was clear.

Case 3.—Y. C., a white girl aged 8 years, presented a symmetric eruption composed of a multitude of small, red, discrete macules. These were only slightly

Fig. 5 (case 3).—In this case nearly every lesion was of the same color, shape and papular stage of development.

scaly and just barely palpable. Nearly every lesion was about the same in size and outline and maintained about the same rate of development during the next few weeks, when the majority were definitely papular and had white glistening scales (fig. 5). The hands and feet and the part of the body above the shoulders escaped involvement. The greatest concentration of lesions occurred on the sides of the trunk, and about the umbilicus the papules were so thick they formed a confluent cast. The florid appearance and distribution and sudden development of this eruption justified a clinical diagnosis of acute psoriasis of the guttate variety. There was no familial history of psoriasis and no previous history of a cutaneous disease. The young patient had rheumatic fever and had been under close medical supervision for more than a year. She had taken 10 grains (0.65 Gm.) of sulfanilamide daily for many weeks, and for some unexplained reason, this dose had been doubled a fortnight before I saw her. Two days later the eruption began. After this a typical lesion was removed from the right side of the lower part of the abdomen for pathologic study.

Microscopic Examination (fig. 6).—The corneal layer was thin, the epidermis was thickened and the granular and germinal layers showed spongiosis and acanthosis. The granular and basal layers showed mitosis, and the rete pegs were elongated, as were the papillary bodies of the dermis, which showed perivascular infiltration.

Pathologic Diagnosis.—The pathologic diagnosis was epithelial hyperplasia and chronic dermatitis, consistent with psoriasis. Under moderate treatment in con-

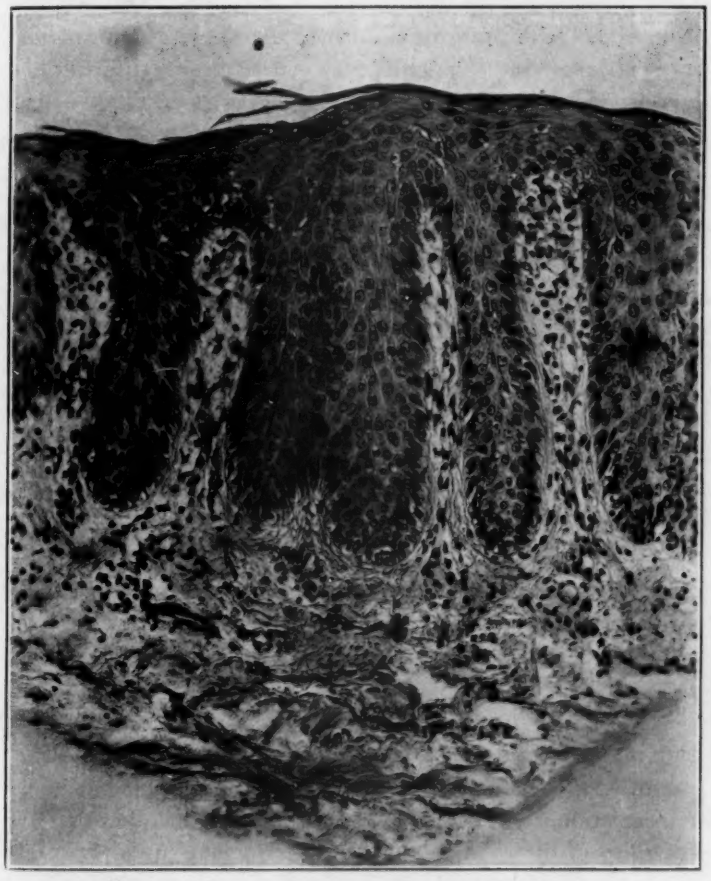

Fig. 6 (case 3).—Epidermal cells show spongiosis, elongated rete pegs and perivascular infiltration of the dermis. × 90.

junction with the care of her family physician her eruption disappeared completely in four months. Six months have elapsed without recurrence.

COMMENT

These 3 patients presented several similar features; all were females; in each the eruption followed relatively soon after she had taken a sulfonamide drug; in each the appearance of the eruption warranted

a clinical diagnosis of psoriasis, and in 2 of the 3 the microscopic diagnosis was consistent with that of psoriasis; none of the 3 had a suggestive hereditary history; none had previous disturbances of the skin. The duration of the eruption in 1 was four months, and the skin has been clear six months. In another the lesions were present four months, cleared from the body but remained in the scalp for fifteen months and then reappeared and have been present ever since. The third still has lesions and has had them continuously for twenty-one months.

Speaking of the entire group, most of the essential features of psoriasis were encountered. The only ones constantly missing were changes in the nails. The interval between the patient's taking the drug and the beginning of signs relating to the skin was in most cases less than two weeks, the extremes being two days and four months. One elderly woman had had psoriasis as a girl and had been free from eruption for years, but after a course of sulfathiazole there was a prompt recurrence of her long dormant psoriasis. Another woman has had psoriasis of the lower parts of the legs each winter for five years following a severe infection of the throat, which was treated with large amounts of both sulfathiazole and sulfadiazine. In none of our cases were my colleagues and I able to persuade the patients to take sulfonamide compounds again except for the 8 year old girl with rheumatic fever. After withholding the drug for a number of months, her physician again prescribed it, and she is now taking 10 grains of sulfathiazole daily for one week out of each month.

SUMMARY

I have observed a series of cases of psoriasiform dermatoses, from which 3 cases are reported.

Study of these cases seems to indicate a sulfonamide drug as the cause.

Experience points to infective processes as an inciting factor in precipitating initial attacks of psoriasis; now apparently we may add another toxic agent—the sulfonamide compounds.

In speculation regarding these cases I think that there is suggested the possibility of the existence of psoriatic patients in whom the disease remains below the threshold of the eruptive phase until some potent excitant such as a sulfonamide drug precipitates an eruptive reaction.

No positive conclusions should be drawn from my few cases or from this limited research, but I hope that others, with larger facilities, may be stimulated to investigate this problem.

227 Sixteenth Street.

ABSTRACT OF DISCUSSION

DR. BEDFORD SHELMIRE, Dallas, Texas: With the advent of the sulfonamide drugs, dermatologists began encountering cutaneous manifestations and allergic

phenomena somewhat different from those produced by the chemotherapeutic agents employed up to that time.

In addition to the ordinary eruptions caused by drugs, rarer manifestations, such as pemphigus-foliaceus-like or varioliform eruptions, solar sensitivities, cyanoses, erythema nodosum, fixed eruptions, chronic discoid and acute disseminated lupus-erythematosus-like conditions and local and widespead eczematoid eruptions, have been repeatedly recorded as having been evoked by this group of chemical agents. In addition, the extracutaneous manifestations, such as drug fevers, swellings of joints, conjunctival hemorrhages and motor and sensory changes, are more frequently observed than in most sensitivities to drugs.

This group of drugs is almost unique in its ability to sensitize the skin to certain solar wavelengths. The sun-sensitizing index of the sulfonamide drugs seems especially high in Texas, where the solar exposure index is at a maximum. There are indications in certain instances either that the sulfonamide drugs are retained in the system for prolonged durations or at least that solar sensitivity persists for long periods after the ingestion or local application of the drug is completely withdrawn. I have observed 1 patient in whom there developed three separate attacks of acute solar dermatitis over the exposed areas two, four and six weeks after complete removal of the drug. In 2 other patients chronic discoid solar dermatitis of the cheeks and back of the neck, of six months' duration, followed the ingestion of sulfonamide drugs. Another patient, with chronic, recurrent papular-vesicular solar dermatitis of the face, ears and posterior surface of the neck, stated that his eruption followed the ingestion of sulfonamide drugs two years previously for the treatment of gonorrhea. I have seen several cases in which papular solar dermatitis of the exposed areas—face, arms and legs—persisted for six to eight months after removal of the sulfonamide preparation.

This group of drugs is outstanding in its ability to be absorbed through the skin after topical application. Widespread eruptions, especially of the eczematous type, are repeatedly seen after local applications even over small areas. When the drugs are applied to an area of preexisting dermatitis or open wounds, evidence of absorption and widespread dissemination may rarely be seen, even in the absence of evidence of local contact dermatitis. In my practice such severe focal flare-ups of existing sulfonamide eruptions or widespread incapacitating recurrences of healed eruptions followed patch tests with this group of drugs that the patch test has been completely abandoned and ingestion of ½ tablet has been substituted to prove cutaneous sensitivity to the sulfonamide preparation. Before abandoning routine patch tests with the sulfonamide compounds in cases of suspected sensitivity to these drugs, I provoked, in several instances, recurrences of healed eruptions which required six weeks or more to heal completely. Therefore patch testing with the sulfonamide drugs is not without danger. The eruptions evoked by this group of drugs, especially the eczematoid type, resemble those produced by iodides, bromides and arsenic because of the frequent prolonged time for healing after removal of the drug either by ingestion or by local application. Sulfonamide eruptions frequently require months to heal completely. I observed a generalized exfoliative dermatitis following the application of sulfonamide powder to a small cut on the finger require five months to disappear completely.

The sulfonamide drugs resemble phenylethylhydantoin in their ability to desensitize on continuous or frequently repeated ingestion, if the reports of the many English authors can be accepted.

Dr. Philpott has recorded an additional cutaneous variation to those previously recorded due to this group of chemotherapeutic agents. The photographs cer-

tainly depict psoriasiform eruptions, and the histopathologic changes in his cases are compatible with those of psoriasis. I have observed only 1 example of psoriasiform sulfathiazole dermatitis. The patient displayed widespread nummular lesions with mica-like psoriasiform scaling over the arms and legs. The eruption slowly disappeared after the cessation of ingestion of sulfathiazole, which had been almost continuous for two years.

Dr. Stuart C. Way, San Francisco: My comments are based on the assumption that 2 of the 3 cases presented by Dr. Philpott represented cases of true psoriasis. First of all, it seems in order to state, regardless of the various theories already advanced, that the real causation of psoriasis is not known. Cutaneous eruptions due to drugs frequently imitate many of the common dermatoses. The data in the 3 cases presented by Dr. Philpott seem somewhat insufficient to establish the sulfonamide compounds as having actually produced psoriasis or an eruption closely resembling psoriasis. It is unfortunate that lack of cooperation on the part of 2 of his patients made it impossible to administer the sulfonamide drug longer. Dr. Shelmire's theory about desensitization may explain the failure of the dermatitis to recur in the third case. To complicate the etiologic problem further, the onset of the eruption was preceded in 2 of Dr. Philpott's cases by a so-called streptococcic infection of the throat and in the third by rheumatic fever. Of course, Dr. Philpott was mindful that infection is a possible cause of psoriasis, as many physicians have pointed out, and he goes ahead to mention in his paper that experience points to infective processes as a deciding factor in precipitating initial attacks of psoriasis. It should be borne in mind that psoriasis is one of the commonest diseases of the skin. Therefore it is logical to assume that according to the law of averages a certain percentage of new cases of psoriasis must develop during and after the administration of such widely used drugs as the sulfonamide compounds. I would like to suggest that the members watch for the sulfonamide drugs as a possible causative factor in new cases of psoriasis.

Dr. Alfred Hollander, Springfield, Mass.: I believe that all the members have seen cases of this type, and I think that the condition should be classified as true psoriasis. I made another observation which I believe belongs in this category. A salesman struck his leg against a counter, inflicting a slight abrasion. The physician who saw him applied sulfathiazole ointment for three consecutive days. The abrasion healed. A week later the man hurt his leg again on the same site. He went to the nurse, and again he was given sulfathiazole ointment to apply. Three days later, as he told me, he saw what he thought was a papular eruption in the injured region. I saw him a week later. He had a typical psoriasis plaque on the site of that injury, and still two weeks later he had typical psoriatic lesions distributed over the trunk and upper and lower extremities. Since this patient had never had psoriasis previously, the question arose whether or not the injury and the consequent application of the sulfonamide drug caused the psoriatic outbreak. He was seen by another dermatologist, who definitely declined to say that the eruption was a result of use of a sulfonamide drug. I believe that I told Dr. Louis Schwartz at the time about my observation. He had not seen anything of that kind.

I think that this case presents the most typical example of Koebner's phenomenon. All such cases can be explained accordingly.

ATYPICAL LICHEN PLANUS TROPICALIS

MAJOR M. G. BUTLER
MEDICAL CORPS, ARMY OF THE UNITED STATES

THE OBSERVATIONS and conclusions concerning the bizarre syndrome atypical lichen planus tropicalis are based on the study of this disease in a group of 247 cases. The patients were cared for at a debarkation hospital for evacuees by air from the Pacific Theater. Patients were seen during the period from October 1944 to September 1945.

In the first cases seen the condition was recognized as a new dermatologic entity, which showed some similarity to hypertrophic lichen planus. The violaceous papulosquamous lesions on the legs were clinically identical, and histologic sections were similar to a degree, although differing in the inflammatory reaction and intercellular edema. The large number of patients involved, the not infrequent deaths and the serious systemic involvement were entirely different. Polygonal shiny lesions characteristic of lichen planus did not occur.

The disease is manifested by an eruption in which the essential lesion is papulosquamous, initially occurring as pinhead-sized follicular papules. The earliest sites of involvement are varied, oftenest on the dorsum of the hands, the trunk or the upper part of the back. The initial lesions tend to coalesce, forming papulosquamous, violaceous, matchhead-sized to pea-sized lesions, which in turn coalesce until the entire skin or large areas are covered by thick plates of violet-gray desquamating skin. Secondary infection with pustules or oozing occurred in some 10 per cent of the cases. Fissures and ulcers were secondary in a few cases. The soles and the palms were often solid plaques, which cracked and bled on motion. Loss of hair in an alopecia-areata-like manner, frequently becoming total, was observed in the cases of severer forms. Grouped follicular papules occurred on scalps in which no hair was lost. The mucous membranes were involved in an eruption most frequently

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This material is original and was presented in a lecture May 8, 1945, at the Army Air Forces District Medical Conference. The original lecture has been amplified. Articles concerning the syndrome atypical lichen planus tropicalis have been published since this time, but they concern many less cases and the illustrations as presented have been less detailed. The serious eruptions considered here are entirely distinct from the larger group of eczematoid dermatitis with lichenification which involved the majority of men evacuated by air because of dermatologic diseases.

resembling leukoplakia associated with fissures and ulcers. Lesions resembling condyloma lata occurred on the genitalia and perianal tissues. Involvement of the mucous membrane was commonest on the lips, tongue and buccal mucosa and infrequent on the genital and anal mucosa. The nails were commonly involved, showing thickening and distortion, with loss of nails in a few instances. Generalized nonsuppurative, nonpainful lymphadenitis, with especially prominent enlargement of the inguinal lymph nodes, was demonstrable in the severe forms. Edema and venous stasis of the lower extremities were usual but perhaps a result of prolonged rest in bed. Systemic complaints of anorexia and severe intractable diarrhea associated with extreme weakness were common.

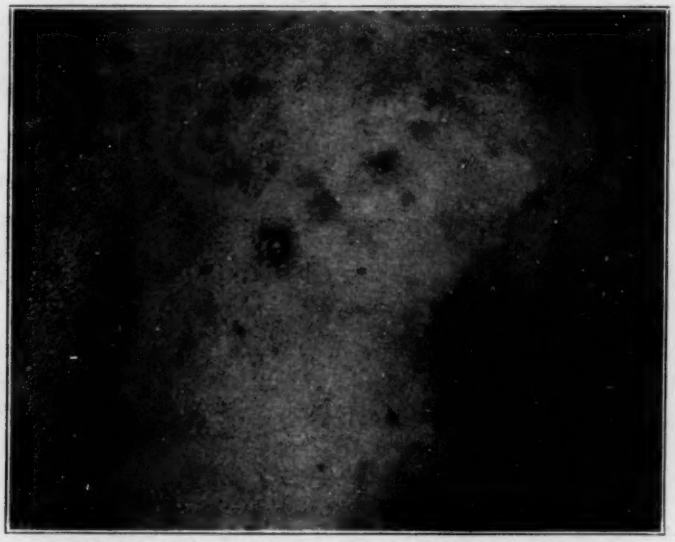

Fig. 1.—Early follicular lesions forming groups and coalescing to form the violaceous papules. Photograph of the shoulder, one of the common early sites of involvement. (Official photograph by United States Army Air Force.)

Cultures of the stools in such cases were negative for bacteria and amebas. The degree of pruritus varied from none to intolerable and did not correspond to the severity of the eruption. Complaints of sharp shooting pains in the legs and disturbances of vision were associated with neurologic findings of decrease in the visual fields and the presence of areas of anesthesia and paresthesia on the skin. Mental disturbances were usually a profound depression, with 3 patients having definite hallucinations and delusions.

The course of the disease seems to include a prodromal stage, in which recurrent pruritus of the skin is present without lesions, following a latent period, which varies from two weeks to two years. The usual

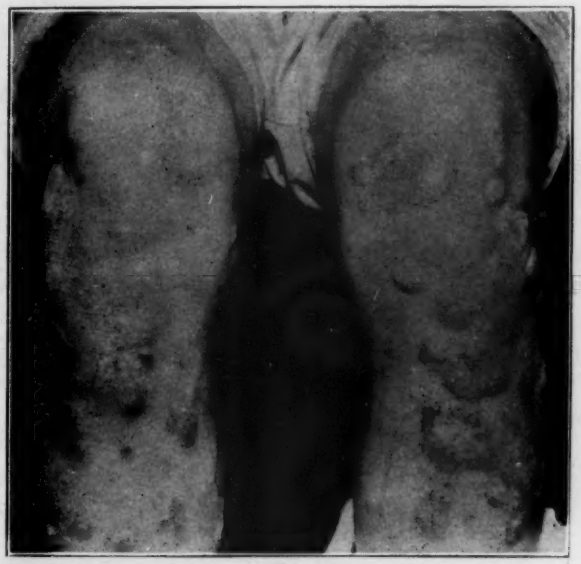

Fig. 2.—Hypertrophic lesions on the anterior surface of the legs, clinically identical with hypertrophic lichen planus. (Official photograph by United States Army Air Force.)

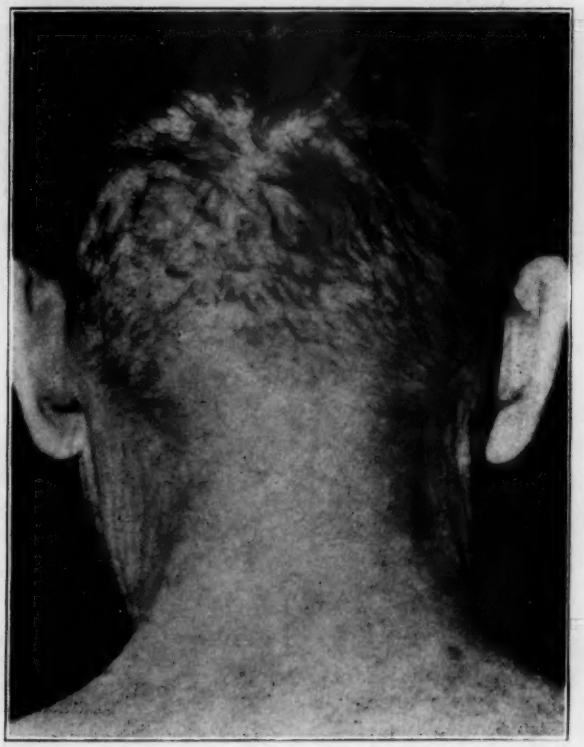

Fig. 3.—Patchy alopecia of the scalp. This is the earliest form, and the alopecia later often became total. (Official photograph by United States Army Air Force.)

time of onset was approximately four months after a patient's arrival in the New Guinea area. Patients became progressively worse if not evacuated to the United States. Patients who had recovered in the United States or Australia relapsed when they returned to the New Guinea areas. Patients with a mild form of the disease seemed to recover spontaneously and within a few weeks, but severe forms continued without improvement for periods extending to five or six months. The development of lesions at sites of trauma was identical with that seen in true lichen planus. Striking residual brown pigmentation persisted for months after the cutaneous lesions subsided, and the regrowth of hair and return of nails to normal required an interval of months. Visual fields returned to normal rapidly, but the complaints of pains in the lower extremities were persistent even after decided improvement of the skin. The temperature remained within normal limits in most

Fig. 4.—Papular lesions resembling condyloma lata as seen in syphilis (Kahn reaction negative). (Official photograph by United States Army Air Force.)

cases. The hematologic findings were variable, but in a few cases the disease was associated with aplastic anemia. I saw 3 such patients but was unable to follow up their course after they left this hospital. A common finding was a relatively high eosinophilia, the count ranging from 2 to as much as 54 per cent. Two patients died while at this hospital, and several other deaths of victims of this disease occurred after their transfer to other hospitals. The 2 fatal cases are reported in detail with the postmortem study.

REPORT OF CASES

CASE 1.—A white woman aged 27 had been overseas twenty-one months. Her initial lesions of the skin developed six months after her arrival in New Guinea. Dermatitis developed after an attack of dengue. She was hospitalized overseas for three months and had varied local treatment. Previous to the onset of her eruption she had taken 1 tablet of quinacrine hydrochloride (atabrine) daily for six months. At the time of evacuation to this country she had received no quina-

crine hydrochloride for a period of three months. Initial examination revealed an emaciated white woman having generalized exfoliative dermatitis with some edema and oozing of the skin. Violaceous papulosquamous lesions characteristic of atypical lichen planus were seen over the dorsa of the hands. She was profoundly depressed mentally and had been taking frequent and large doses of barbiturates. There were extreme weakness and anorexia with evidence of severe dehydration. She had not received medicaments or plasma intravenously, because no superficial veins could be entered through the thickened, edematous skin. Eight hours after arrival she became comatose and showed decided respiratory depression. The possibility that she had taken a large dose of barbiturates in an attempt at suicide was raised by the fact that a quantity of barbiturates was found in her luggage. Intrasternal administration of whole blood and respiratory stimulants of various types with dextrose in isotonic solution of sodium chloride were administered, but the patient died twelve hours later. The hemoglobin content was 102 per cent and the white blood cell count 17,400, with a differential count of 31 polymorphonuclears, 14 lymphocytes, 1 basophil and 54 eosinophils.

Postmortem Observations.—Skin: The skin showed generalized erythema, exfoliation and a dried exudate. Microscopic sections showed hyperkeratosis and parakeratosis with acanthosis and an inflammatory infiltration of the corium in the papillary layer; in some areas there was a polymorphonuclear infiltrate of the epidermis, with intercellular edema and abscess spaces showing necrosis of the epidermis and collections of polymorphonuclear leukocytes, with an appreciable number of eosinophils. The pathologist reported the picture of exfoliative dermatitis combined with lichen planus.

Spleen: The spleen contained numerous eosinophils and two small nodules similar to malpighian corpuscles but, possessing, centrally, macrophages which showed epithelioid cells, fibrocytes and much acellular connective tissue. The lesions suggested healed tubercles of an unusual type.

Gastrointestinal Tract: The gastrointestinal tract showed leukocytic infiltration of the submucosa and in some areas acute inflammation of the epithelial mucosa.

Liver: Almost the entire tissue was abnormal. There were side by side evidences of atrophy and regeneration with multinucleated cells. Some large basophilic cells resembling megakaryocytes were present. Moderate proliferation of the bile ducts was present. The abnormal nodule grossly seemed to be adenoma of the liver but was associated with a peculiar cirrhosis. The pathologist stated, "We are not sure what the lesion is, and for descriptive purposes we label it 'adenomatous cirrhotic nodule of the liver'."

Brain: Pericellular and perivascular spaces containing fibrin shreds were associated with cerebral edema and associated vascular damage, with some leukocytic infiltration of the perivascular tissues.

Pathologic Diagnosis.—The diagnosis was dermatitis, exfoliative and lichenoid; gastritis, acute, focal and slight; ulceration of the gastric mucosa, and colitis, acute, focal and slight. The brain showed edema and pericellular and perivascular inflammation of the cerebrum and cerebellum. No evidence of barbiturate poisoning was found.

Case 2.—A white man aged 39 had been overseas twenty-seven months. His initial lesions of the skin developed four months after his arrival in New Guinea. He had taken 1 tablet of quinacrine hydrochloride daily for a period of ten months. He was hospitalized overseas for six months. On arrival at this hospital his previous exfoliative dermatitis had subsided, showing only residual dryness and

pigmentation. There were profound mental depression, loss of memory, mental confusion, partial loss of vision, severe anorexia and intractable diarrhea. The mucous membranes of the tongue and mouth were reddened and dry and showed some ulcers of a superficial type. There was definite tenderness of these membranes. The patient had lost 37 pounds (16.8 Kg.). Blood cell counts revealed secondary anemia. The patient was treated by transfusions of whole blood, injections of liver intramuscularly, multivitamins, intravenous administration of dextrose and large doses of penicillin intramuscularly. He remained weak despite the transfusions and became increasingly confused mentally, and four days before death a dry cough developed. Physical examination revealed a few mild rales at the bases and some dulness to percussion. Death occurred six weeks after admission. During this interval he had received a total of twelve transfusions and 3,600,000 units of penicillin, without even temporary improvement. Clinically, the diagnosis was atypical lichen planus tropicalis complicated by generalized exfoliative dermatitis and pellagra plus terminal pneumonia.

Postmortem Observations.—The patient was grossly an emaciated white, middle-aged man showing generalized pigmented scaling areas of skin over the entire cutaneous surface.

Skin: Atrophy was present, with loss of rete pegs. The basal layer was partially destroyed, and the epidermal cells showed edema and degeneration. The upper layer of the corium showed a bandlike, chronic, inflammatory infiltrate consisting of lymphocytes and mononuclear cells with a rare polymorphonuclear leukocyte. Some deposits of melanin were noted. The collagen showed degenerative changes. The picture was consistent with that of healing lichenoid dermatitis. Sections from another area of skin showed parakeratosis and acanthosis, with numerous broad rete pegs and some clubbing. The basal layer was partially destroyed, and the papillae showed vascular dilatation and edema, with formation of new capillaries. There was a chronic, inflammatory infiltration around the appendages of the skin and blood vessels. The sweat glands showed slight degenerative changes. The picture resembled a psoriasiform lesion. (These descriptions are those of a general pathologist. It was impossible to obtain slides for personal examination.)

Brain: The brain was slightly enlarged, weighing 1,600 Gm. The vessels over the cerebral convolutions showed generalized congestion. There was a diffuse increase of glial cells in the cerebral cortex, including astrocytes and macroglial and microglial cells. Occasional ganglion cells showed degenerative changes, with vacuolation of their cytoplasm. There were areas of perivascular polymorphonuclear and lymphocytic infiltration. In the cerebellum a similar infiltration had occurred around the blood vessels. Sections through the third ventricle revealed accumulations of large numbers of myelin bodies in the brain substance. Sections through the thalamus and mamillary bodies revealed some degeneration of ganglion cells and two focal areas of hemorrhage. Several minute foci of hemorrhage were noted in the basal ganglions and brain stem.

Peripheral Nerves: A loss of nerve fibers and myelin sheaths was noted in the peripheral nerves included on sections of skeletal muscle.

Heart: There were focal areas of degeneration, with vacuolation of myocardial fibers, fragmentation and even total loss of individual fibers. Scattered inflammatory cells were noted throughout the myocardium, consisting of lymphocytes, mononuclear and polymorphonuclear leukocytes.

Lungs: Extreme congestion and scattered focal areas of hemorrhage were present. There was patchy profuse infiltration by leukocytes. Numerous macro-

phages were seen around blood vessels and beneath areas of slightly thickened pleura.

Lymph Nodes: The lymphatic sinusoids were packed with polymorphonuclear leukocytes and scattered red blood cells. Numerous macrophages filled with granular black pigment were seen in the medulla of the lymph node. Sections of several other lymph nodes revealed no follicular hyperplasia but, rather, a generalized increase in lymphocytes, with edema and congestion.

Gastrointestinal Tract: The mucosa throughout showed mild evidence of inflammatory reaction, and the sections revealed an infiltration similar to that seen in the corium of the skin. Again, numerous macrophages containing black pigment were noted.

Liver: There were a generalized increase in hepatic fibrous tissue and numerous hepatic cells having two nuclei. Some hepatic cells contained clear vacuoles.

Pathologic Diagnosis.—The pathologic diagnosis included degeneration, focal and acute, of the myocardium; severe bronchopneumonia, acute and organizing, in all lobes of both lungs; congestion and edema of the lymph nodes; passive and chronic congestion of the liver; sporadic degeneration of the ganglion cells, cerebrum, thalamus and brain stem; hemorrhages and petechiae, thalamus and brain stem; degeneration of the ganglion cells, anterior horns and cervical cord; degeneration of the peripheral nerve fibers; chronic lichenoid dermatitis, which was healing, and mild exfoliative dermatitis.

Comment by Pathologist.—This soldier apparently suffered from a chronic, lichenoid type of dermatitis which was progressive and developed into exfoliative dermatitis. Despite minimal pathologic changes in the gastrointestinal tract, he suffered from diarrhea, and subsequently degenerative changes developed in the central nervous system and peripheral nerves. The bronchopneumonia subsequent to debility is sufficient to account for death.

COMMENT

As to the cause, this is the type of dermatitis seen in patients returning from the Pacific theaters with a history of therapy with quinacrine hydrochloride. The cause of the changes in the nervous system is obscure but may be a result of vitamin deficiencies resulting from the diarrhea. The changes seen in the heart and various organs may be due to multiple deficiencies of the vitamin B complex group or to toxic factors as a result of either the exfoliative dermatitis or the same agent which caused the dermatitis.

Clinically, this new entity occurred in men and women, with an apparent increased susceptibility of women. One out of every 12 patients was a woman, a much greater proportion than the relative number of women in the Pacific area. There were persons of all ages, from 17 to 60, with, of course, the greater number in the age group common to the Army, i. e., 20 to 30. No race possessed immunity. Patients seen by my associates and me included Negroes, Indians, Chinese, Filipinos and white persons, in proportion to the numbers in the area. A careful study of the past and family histories failed to reveal any significant incidence of previous cutaneous disease, allergies or susceptibility to pyogenic infections. The disease occurred impartially in emotionally unstable and phlegmatic patients. The officers were as frequently involved as

enlisted men. Several common factors concerned all these patients. First, they were all taking quinacrine hydrochloride in doses of 1 or more tablets daily. Second, they were all stationed in the area of or near the latitude of New Guinea. In some persons the eruption developed after they had left these areas, occasionally even during the first few days after arrival in the United States. Most of the patients had been actually ashore in New Guinea, Morotai, Biak or Burma, but some 12 patients were never ashore but did live on shipboard near these land masses. This territory has a climate which is hot, with the temperature in the day frequently 90 to 130 F. and a humidity of nearly 100 per cent. The men were malnourished, with an average loss of 20 to 40 pounds (9 to 18 Kg.). This was a result of the climate and the lack of palatability of dehydrated foods. After a few weeks of eating these foods men often subsisted on coffee and doughnuts, refusing the other foods. Fresh vegetables, milk and meats were practically never seen. A few cases occurred, however, among medical officers who took vitamins regularly and forced themselves to eat a balanced diet. The incidence of true lichen planus among evacuees by air was no more than the incidence of this disease among a similar group of civilians, and in the cases of true lichen planus the conditions were not serious. Consideration of quinacrine hydrochloride as a cause of this syndrome was prompted by the use of quinacrine hydrochloride by all troops. Against this being the true cause, in my opinion, is the fact that experimental doses of quinacrine hydrochloride in larger doses in a group of volunteer students did not produce atypical lichen planus tropicalis. Doses were continued for several weeks but, of course, not for the prolonged periods in which quinacrine hydrochloride was taken overseas, nor was the number participating large enough to rule out the possibility of an idiosyncrasy evident in the larger groups of troops. Atypical lichen planus tropicalis was not reported in the other theaters where quinacrine hydrochloride was used. A nationally known dermatologist with experience in the African and Italian theaters examined patients with me and declared that the syndrome was entirely different from any seen in those theaters. Intelligent patients, including physicians and dentists, maintained that while they had taken quinacrine hydrochloride for from one to two years in other areas atypical lichen planus tropicalis did not develop until some time after their residence in the New Guinea area. In Filipinos who had lived on Luzon all their lives and who had taken quinacrine hydrochloride while stationed in the Philippines, the disease developed after transfer to New Guinea. These patients maintained that both natives and Japanese in the New Guinea area had a similar eruption. Reactions to passive transfer tests and patch tests to quinacrine hydrochloride were negative in 6 cases checked. Finally, the continued use of quinacrine hydrochloride did not prevent or retard

recovery of a test group compared with a group under identical treatment who received no quinacrine hydrochloride during treatment. Three patients from whom quinacrine hydrochloride had been withdrawn for more than six months showed no improvement until treated with penicillin.

Treatment of these patients was largely symptomatic and empiric. Baths in starch and sodium bicarbonate were used twice daily for cleaning and relief from pruritus. In uncomplicated forms 2 per cent salicylic acid in cold cream was applied after the baths. The patients received a special high vitamin, high caloric diet. They were given multivitamins and, in some cases, liver extract intramuscularly. After treatment of 1 patient with a complicating pyoderma by the use of intramuscular injections of penicillin, his atypical lichen planus of more than six months' duration cleared within three weeks, and he was discharged to duty, with only residual pigmentary changes. This patient had no relapses during the subsequent six months. After this result all patients with severe eruptions were treated with 320,000 units of penicillin daily for a period of eight days. Approximately 80 per cent showed an immediate improvement, with gains in strength and weight accompanied with flattening of their cutaneous lesions. These patients were transferred to a special hospital within ten to twenty days, and I had no opportunity to follow their further progress. Application of penicillin locally where only a few lesions were present similarly produced involution of the lesions within a period of seven to ten days and reduced pruritus.

CONCLUSIONS

The clinical picture of a severe, systemic disease associated with a papulosquamous violaceous eruption resembling hypertrophic lichen planus is described.

The theory that quinacrine hydrochloride is the cause of this eruption is discussed but does not appeal to me as the true cause, although it may have been a contributing factor in producing porphyrin bodies which sensitized the skin.

The probability that a systemic infection by some unknown infectious agent having geographic limitations to the New Guinea and surrounding territories is a better explanation of the picture presented. The possibility that the infectious agent is transmitted through an intermediate host, such as an insect, has been inadequately explored. Another possibility is that the eruption is an unusual idlike response to infection of the skin by staphylococci, a common and serious cutaneous infection in the tropics; to date, however, no recurrence of atypical lichen planus tropicalis has been observed, while such recurrences have been common in patients with the more frequent infectious eczematoid dermatitis returning from the tropics.

It is felt that the term atypical lichen planus tropicalis is a poor one for the syndrome and should be used only until final determination of the true causation.

502 South Jefferson Street, Saginaw, Mich.

ADDENDUM

Since the presentation of this article a summation of opinions concerning the described disease has been published in the *Bulletin of the United States Army Medical Department.* Evidence of occurrence in other geographic areas increases the probability of quinacrine hydrochloride being considered an etiologic agent.

Obituaries

ERICH URBACH, M.D.

1893-1946

Erich Urbach died of coronary thrombosis in Philadelphia Dec. 17, 1946, at the comparatively early age of 53. He is survived by his wife, Dr. Josepha Urbach, to whom he was married July 29, 1921, and by two sons, Fred, an intern in the Jefferson Medical College Hospital, and John, a senior medical student at the University of Pennsylvania School of Medicine.

Urbach's education evidences the continental thoroughness of preparation for a life work. Thirteen years in the schools and Imperial Staats-Gymnasium of his birthplace, Prague, Czechoslovakia, was followed by two years (1912 to 1914) of study in the School of Medicine of the University of Vienna, interrupted by World War I and resumed in 1918. During the first world war he served as lieutenant in the Austrian army, attached to the surgical service of Eiselberg, twice received the Gold Cross of Merit for valor and was awarded a silver Medal of Honor from the Red Cross. From 1918 to 1920 he interned in the Allgemeine Krankenhaus, Vienna, Austria, in 1920-1921 was on the staff of the elder Jadassohn at Breslau, Germany, and from 1921 to 1923 was resident in internal medicine at the Allgemeine Krankenhaus. From 1923 to 1928 he served under Koenigstein at the Jewish Hospital, Vienna, Austria, and in 1923 was made a Fellow of the Vienna Board of Dermatology. In 1928 he became assistant chief under Kerl in the Department of Dermatology and Syphilology of the University of Vienna and in 1929 became associate professor. From 1936 to 1938 he headed the Department of Dermatology and Allergy of the Merchants' Hospital.

In April 1938 Urbach came to the United States as a war *émigré*; from that date to the time of his death he was associate in dermatology at the University of Pennsylvania School of Medicine, practiced in Philadelphia and, since 1929, headed the Allergy Department of the Jewish Hospital. His society memberships included the Vienna, Hungarian, Polish and Turkish dermatological societies and the College of Physicians of Vienna. He was a member of the Philadelphia Society of Allergy and a regent of the American College of Allergists.

An examination of Urbach's publications, numbering two hundred and eleven papers and five books plus a second edition of his "Allergy," shows him to have been one of the most productive workers of his day

and field. An analysis of the papers by title and journal of publication discloses further his remarkable range. Twenty-seven papers deal with pathology, thirty-one with physiologic chemistry, ten with endocrinology and metabolism, two with internal medicine and forty-five with clinical dermatology. Allergy, the field of his major effort, is represented by ninety-seven papers. Their chronology and the standing of the journals publishing his communications show the validity of his basic scientific training in pathology and physiologic chemistry, acquired under Paltauf and Fuerth in the Institute of Experimental Pathology. He was, moreover, an omnivorous reader and an indefatigably alert student and observer, which gave him an acquaintance with literature and an ingenuity in method that was the envy of associates and the admiration of students. He moved at high intellectual speed, and it is not surprising that some of his conceptions and assertions are still unappreciated or unchecked. His contributions to the lipoidoses of the skin alone would have justified him as a dermatologist.

To evaluate Urbach fully as an investigator is obviously at the present time impossible, since it will involve extensive confirmatory and critical laboratory work that few are fitted to undertake. It may be said without hesitation that his experimental work is alive and challenging and at the forefront of his day and deserves prompt recheck because of its basic importance in the comprehension of mechanisms of cutaneous reaction. He brought to one American clinic, at least, a new and stimulating outlook on carbohydrate metabolism, on photosensitivity and on the import and domain of allergy in dermatology. From one angle or another he was constantly shedding new light on clinical problems; the bacterial flora of the intestine one moment, dietotherapy the next and the pathologic changes of periarteritis nodosa the next. He appreciated the psychogenetic, as one would hardly expect from his tradition, and once in his Vienna clinic he pointed out to me, in a humorous moment, the psychotherapeutic importance of the large glass insert in a conduit evacuating colonic irrigation fluid, placed so the patient could observe it.

As a teacher Urbach was greatly appreciated, for he possessed analytic power, grasp, incisiveness, knowledge of medicine at large and of the literature and convictions. Even before his command of English became adequate, listening to him was a pleasure because of the faceted quality of his thought, and he was in special demand among interns to discuss a referred case. Graduate students who sat under him in Vienna have expressed warmly their appreciation of his teaching. One of his finest qualities was his willingness to lay all his cards on the table in diagnostic analysis and treatment. One could forgive him occasional prejudice, for one knew that he never withheld any part of his intellectual resource. His associates constantly drew on him

for his encyclopedic acquaintance with the literature and his intimate knowledge of continental methods of treatment, based on masses of material and experience rare in this country. His occasional excursions into nomenclature, which have irritated even some of his otherwise admiring critics in allergy, were side expressions of a continental analytic tradition inevitable at the Hebra center of the dermatologic universe.

As faculty associates, his passing leaves us all with a deep sense of loss. To us he was *Kollege* in the fullest sense. He shared, and he never shirked. He worked himself ruthlessly, contributed cases and disputation, made rounds, thought, wrote and spoke vividly, challenged one's critical faculties and upset one's complacencies and torpors. His advent was a genuinely refreshing experience. At an age when change is not too well received in a professional life, he had changed environment, language, associates and economic and professional status and weathered it all with benefit of many warm friends and despite a few good enemies. His record and achievements speak for themselves and would have graced a much longer life.

JOHN H. STOKES, M.D.

Correspondence

ANGIOMAS OF THE SCROTUM

To the Editor:—Regarding angiomas of the scrotum (angiokeratoma, Fordyce), Robinson and Tasker (ARCH. DERMAT. & SYPH. **54**:667-674 [Dec.] 1946) concluded that their "reported case is the first in which angiomas of the tongue were associated with those of the scrotum . . ." I call attention to a statement I (Sutton, R. L., and Sutton, R. L., Jr.: Diseases of the Skin, ed. 10, St. Louis, C. V. Mosby Company, 1939, p. 668) published in 1939, that "in all such cases seen by the junior author, the tongue showed beneath it and along its border the telangiectases which characterize Osler's disease, one manifestation of which vascular anomaly we believe scrotal angiokeratoma to be." That sentence ought by now to be revised to read, "In several such cases . . ."

I hesitantly claim priority for my observation, which—if Robinson and Tasker saw it—was not, they could correctly rebut, a formal report of a case. Sutton Sr. and I have often remarked what sharp eyes were possessed by many men, some of them long dead.

If this addendum to Robinson and Tasker's article contains any generality, it is that a claim for priority can be justified if and only if a most careful and tedious search of records (hardly worth the while) has proved fruitless. Clinically, things are seldom seen which have not been seen before, although interpretations vary almost from day to day.

RICHARD L. SUTTON JR., Kansas City, Mo.

News and Comment

GENERAL NEWS

At a recent meeting of the American Board of Dermatology and Syphilology, it was voted to abolish group A as of Jan. 1, 1949. On and after that date all candidates for the certificate of the board must submit proof of three full years of training in an approved institution.

Abstracts from Current Literature

CONGENITAL GLAUCOMA FOLLOWING MATERNAL RUBELLA. DUPONT GUERRY III, Am. J. Ophth. **29**:190 (Feb.) 1946.

Two cases are reported of congenital glaucoma following maternal rubella during the first and second months of pregnancy.

OCULAR LEPROSY IN PANAMA. R. D. HARLEY, Am. J. Ophth. **29**:295 (March) 1946.

The effect of leprosy on the eye has been studied in 150 cases in Panama. Seventy per cent of the patients were natives of Panama; the remainder came predominantly from the bounding countries and the West Indies. Ninety per cent of the patients of a leprosarium were found to have ocular involvement. Impaired vision is common in leprosy. Thirteen per cent were totally blind, and an additional 41 per cent had vision reduced to 20/200 or less. The anterior segment of the eye is by far more frequently involved than is the posterior segment. Superficial punctate keratitis or pinpoint lepromas of the irises are so typical as to be diagnostic of ocular leprosy. Glaucoma is not common. Absolute corneal anesthesia is rare, but relative loss of corneal sensitivity does occur.

Prophylaxis for leprous eyes through protection with dark glasses or goggles is indicated. The factor of protection has been underemphasized in the past.

Therapy is largely confined to palliative measures. Solution of thyroxin used topically may be of aid in helping to clear corneal infiltrates. The leper withstands surgical treatment of the eye better than one might suspect. Operation on the lids produces gratifying results.

THE LICHEN PLANUS–ECZEMATOID DERMATITIS COMPLEX OF THE SOUTHWEST PACIFIC. ERVIN EPSTEIN, Bull. U. S. Army M. Dept. **4**:687 (Dec.) 1945.

The author reported a study of 65 cases. The disease is the most frequent cause of evacuation for cutaneous diseases from the Southwest Pacific area. The dermatitis is usually of the hypertrophic type. The lesions are purplish coalescent nodules. The mucous membranes of the mouth are often involved, but some extensive conditions do not present such involvement. The lesions look like lichen planus but present many unusual features, including atypical localization, occasional atrophic sequelae, abnormal histologic features, lack of typical lichen planus papules and unusual hyperpigmentation. In addition, the frequent transformation into an eczematoid, exfoliative, dermatitis-like eruption is at best an extremely unusual manifestation of lichen planus, while it is not uncommon in the syndrome described. The complications described are pyogenic, residual or recurrent dermatitis, pigmentary changes, disturbances in the sweat mechanism and psychogenic complications. The most important laboratory finding is hypoproteinemia.

Among the causative factors are (1) quinacrine hydrochloride (atabrine), (2) contact dermatitis and (3) mycoses. The treatment is nonspecific and not too efficacious, consisting in soothing applications of wet packs. Sulfonamide drugs and penicillin have no effect. The eruption starts to improve, as a rule, as soon as the patient leaves the Southwest Pacific, although many months are usually required for complete clearing.

REACTIONS TO PENICILLIN. FRANK E. CORMIA, LEIF Y. JACOBSEN and E. L. SMITH, Bull. U. S. Army M. Dept. **4**:694 (Dec.) 1945.

The study deals with the serious and unusual reactions obtained in some 2,000 soldiers receiving prolonged courses of penicillin. Serious reactions have been

reported in about 0.5 per cent of the patients reported. Reactions may occur shortly after initial exposure to penicillin, as a result of an existing hypersensitiveness, or at later intervals, because of developing sensitization. Both early and late reactions may be serious in nature and require discontinuation of therapy. From clinical observations, it appears that the primary shock tissue in most reactions to penicillin is the vascular bed.

Intradermal testing with penicillin has been of limited value as an aid in diagnosis and a guide for further treatment. Increased reactivity to penicillin may occur on the basis of a previous acute fungous disease.

SKIN SENSITIVITY DUE TO ATABRINE. RICHARD WHITEHALL, Bull. U. S. Army M. Dept. **4**:724 (Dec.) 1945.

The author reported an eczematous dermatitis involving the eyelids and the areas behind the right ear due to quinacrine hydrochloride (atabrine). A positive reaction to a patch test with quinacrine hydrochloride was obtained.

DERMATITIS FROM ATABRINE. L. M. NELSON, Bull. U. S. Army M. Dept. **4**:725 (Dec.) 1945.

The author reported a case of pruritic dermatitis of the wrist which finally spread to involve the whole body and a second case of a generalized dermatitis which eventually developed into a generalized exfoliation. Positive reactions obtained by patch testing with powdered quinacrine hydrochloride (atabrine) were interpreted to be a manifestation of hypersensitivity rather than of a primary irritant, since 8 patients with other dermatoses tested in the same manner did not react similarly.

STRAKOSCH, Denver.

THE ANTIBACTERIAL AND FUNGISTATIC PROPERTIES OF PROPAMIDINE. WILLIAM O. ELSON, J. Infect. Dis. **76**:193 (May-June) 1945.

Propamidine (4,4′-diamidinodiphenoxypropane) was first synthesized by Ewins and his co-workers in the course of their studies on the trypanocidal activity of aromatic diamidine compounds and was shown to possess well marked activity against various protozoal organisms. Subsequently, Thrower and Valentine demonstrated that this compound had considerable antibacterial action against gram-positive cocci, both in vitro and clinically in the treatment of infected wounds and burns. These findings were verified in reports from several other clinical investigators.

Despite extensive investigations, there have been no reports in the literature of studies concerned either with the general antibacterial spectrum of this agent or with its fungistatic activity against the common pathogenic fungi. In the course of investigations carried out in Elson's laboratory, these properties have been studied and serve as the basis for this report. In this, the author presents the antibacterial spectrum of propamidine against representative gram-positive and gram-negative organisms. He studied the fungistatic action of propamidine as related to a number of the common superficial and deep pathogens. The sensitivity of some of these organisms compares with that of the gram-positive cocci. The antagonistic effects of a phospholipid on the fungistatic action of propamidine can be demonstrated. There is an important relation of hydrogen ion concentration to bactericidal activity of propamidine from the standpoint of competitive cationic adsorption.

ROCKY MOUNTAIN SPOTTED FEVER. CHARLES C. SHEPARD and NORMAN H. TOPPING, J. Infect. Dis. **78**:63 (Jan.-Feb.) 1946.

The authors performed complement fixation tests with Rocky Mountain spotted fever antigen on serums of dogs from several parts of the country. They obtained high-titered reactions in serums from known areas of spotted fever. The incidence of strongly positive reactions was greater in the dogs selected for their proximity to human patients with the disease.

CORNBLEET, Chicago.

PENICILLIN LEVELS IN SERUM AND SOME BODY FLUIDS DURING SYSTEMIC AND LOCAL THERAPY. EDWIN M. ORY, MANSON MEADS, BRUCE BROWN, CLAIRE WILCOX and MAXWELL FINLAND, J. Lab. & Clin. Med. **30**:809 (Oct.) 1945.

The authors report their observations on penicillin levels in serum and in some of the body fluids which are commonly infected with susceptible organisms. The data were obtained almost entirely on patients while under treatment with various doses of penicillin given by different routes.

The penicillin was usually given in 0.85 per cent solution of sodium chloride, except in patients with cardiac disease, in whom the continuous injections were given in 5 per cent dextrose solution, and in those treated by inhalation. The concentration of penicillin in the body fluids was determined by the serial dilution method of Rammelkamp. A strain of hemolytic streptococcus no. 98, obtained from Dr. C. S. Keefer, was used throughout. Human group O cells were used as an indicator in tests with body fluids in order to avoid the nonspecific hemolysis observed when horse cells are used.

Their results were as follows: During continuous intravenous and intramuscular infusion, fairly constant levels were maintained in the serum of any given patient, but the levels may vary in different patients on the same dose. They found that continuous intravenous infusions when given for more than forty-eight hours may give rise to thrombophlebitis, and the continuous intramuscular infusions were more difficult to regulate and often painful.

During intermittent intramuscular injections a range of serum levels, but not exact values, can be predicted for the interval between doses in any given schedule of dosage. Larger doses resulted in serum levels which were sustained longer and at higher values than smaller ones. They were not able to find any detectable penicillin in the cerebrospinal fluid when given via the intermittent intramuscular route. The levels in pleural, peritoneal and synovial fluids were erratic and usually lower than levels in the serum.

The diffusion of injections of penicillin into the body cavities out into the serum was erratic, but adequate concentration usually remained in cerebrospinal, pleural and pericardial fluids for twenty-four hours and sometimes forty-eight hours or longer after local injections of large amounts.

After inhalations of penicillin from nebulized solutions, small amounts of penicillin may be detected in serum for short periods but rarely longer than two hours.

ATTEMPTED TRANSMISSION OF HUMAN LEUKEMIA IN MAN. J. B. THIERSCH, J. Lab. & Clin. Med. **30**:866 (Oct.) 1945.

Since it is known that in mice, guinea pigs and fowls leukemia can readily be transmitted, with a minimal amount of cellular material, in inbred strains, the author attempted transmission of human leukemia in a large number of patients with carcinoma and other chronic diseases with a life prospect of less than two years.

The materials used were cellular suspension of lymph nodes or suspension of splenic material (removed at autopsy) or blood from living leukemic patients. It was always fresh and injected between twenty minutes and one hour after it had been taken from the patient. All materials used were bacteriologically sterile. The bloods of the recipients were examined before inoculation of the leukemic material, daily for a week and then weekly for three months, following which they were observed monthly. Whenever possible, postmortem examinations were conducted on all patients inoculated.

The authors also attempted cross transmission of chronic myeloid leukemia to patients with chronic lymphatic leukemia and vice versa, in order to see whether patients with one type of leukemia were susceptible to the other type.

All transmission attempts from one person to another and cross transfusion between patients with leukemia failed within a two year period of observation. The author feels that the negative results obtained do not mean that leukemia is not transmissible but were mainly due to unsuitable recipients and unsuitable routes of transmission.

GELBER, Los Angeles.

SCLERODERMA WITH INVOLVEMENT OF THE VISCERA: REPORT OF CASE. D. G. PUGH, W. F. KVALE and HAROLD MARGULIES, Proc. Staff Meet., Mayo Clin. **20**:410 (Oct. 31) 1945.

A case of scleroderma is reported in which roentgenologic examination revealed changes in the esophagus and small intestine due to scleroderma. There also was scleroderma of the lungs in this case. Some involvement of the colon and heart by scleroderma was suspected but could not be determined with certainty. Characteristic sclerodermatous changes of the skin were present. The lesions of scleroderma result from an abnormal change in the collagen and terminate in induration of the tissue. Connective tissue in almost any part of the body may be affected by scleroderma.

FRUMESS, Denver.

SELF-DISINFECTION OF THE SKIN: A SHORT REVIEW AND SOME ORIGINAL OBSERVATIONS. J. M. L. BURTENSHAW, Brit. M. Bull. **3**:161, 1945.

Burtenshaw reviews the literature on self disinfection of the skin and concludes that the disinfectant power rises with increased acidity. The authors who found that acid sweat is a good culture medium may have used an unreliable method of recovering bacteria from the skin, namely, swabbing. Further, the long chain fatty acids are not present in sweat; they are mainly secreted in the sebum and cling to the surface of the skin, where they may be sufficiently concentrated to kill even the staphylococcus. Ether extract from hair was analyzed and the different fractions examined for streptococcicidal power. Only fractions containing fatty acids and soaps were active. The inactive fractions were esters of fatty acids, sterols and higher alcohols. A number of fatty acids were tested for streptococcicidal power. Those with longer chains, capric, lauric, oleic and stearic acids, and, less actively, their soaps killed the streptococcus. The unsaturated oleic acid was more active than its saturated homologue, stearic acid. The more acid the solution used, the better its bactericidal power, but certain substances found in the skin and its secretions and lactic, citric and ascorbic acids were inactive against Streptococcus pyogenes. The whole range of acids of the acetic series, from formic to stearic and oleic, and, to a lesser degree, their soaps are important agents in killing bacteria, fungi and viruses on the surface of the skin.

THE SKIN AND THE RETICULAR TISSUE. A. H. T. ROBB-SMITH, Brit. M. Bull. **3**:172, 1945.

The term reticulosis is a generic morphologic title to describe a group of changes characterized by progressive hyperplasia of the cells of the reticular tissue, and it is usually restricted to the conditions in which the cause of the hyperplasia is unknown; however, in a broad sense, reticulosis could include the cellular reactions in typhoid or tuberculosis. The chief sites of the reticular tissue are the blood-forming organs, but connective tissue is also a part of reticular tissue; the dermis is but a specialized form of connective tissue, and it is in the dermis that reticular proliferations are observed. Of the leukemias, cutaneous lesions are most commonly observed in lymphatic leukemia and may consist of diffuse erythroderma or nodular purplish tumors affecting the face or small nodules scattered on the body. Sometimes the nodules may be limited to the conjunctivas or eyelids. In Hodgkin's disease, true involvement of the skin by lymphadenomatous tissue is rare and usually takes the form of plaques on the trunk with a tendency to ulceration. Lymphoid follicular reticulosis (follicular lymphoblastoma) is not uncommon. It is a relatively benign disease, with a survival period of ten or more years, which occurs between the ages of 40 and 50, usually presenting generalized enlargement of the lymph nodes and sometimes associated with hepatosplenomegaly. The cutaneous lesions, when present, take the form of multiple small nodules on the face or trunk, which may regress spontaneously, leaving soft depressed scars. The histologic picture is characteristic: There are large follicles of lymphoblast cells lying in a stroma of small lymphocytes. Mycosis fungoides differs from

many reticuloses in that the cellular proliferation of the tumorous lesions occurs in the superficial dermis and spreads intraepithelially. A striking feature of mycosis fungoides is the long prodromal stage, and in this stage the histologic changes are not characteristic. The lipidoses are a group of diseases in which there is a progressive hyperplasia of the reticular cells associated with an excess of lipid within the cells themselves. In the lipidoses it is not known whether there is a generalized disturbance of lipid metabolism, with the abnormal lipids taken up by the reticular cells, or whether there is merely a disturbance of intercell metabolism of the reticular cells with retention of lipid within the cytoplasm. Lipomelanic reticulosis (exfoliative erythroderma with lymphadenopathy) is a group characterized by generalized exfoliative dermatitis in men of the fifth to seventh decades, invariably pruritic, in which the color of the skin ranges from *homme rouge* to a dark brown. There is generalized lymphadenopathy, sometimes hepatosplenomegaly, and the hemogram shows neutrophilic leukocytosis with eosinophilia, sometimes of extreme degree. Lymphocytoma cutis, the Spiegler-Fendt sarcoid and histiocytoma have been classified as benign reticular tumors of the skin, whereas Kaposi's angeiosarcoma is considered a malignant reticular tumor with certain similarities to mycosis fungoides: a slowly progressing prodromal stage with a later, rapidly progressing malignant stage. The theories of the pathogenesis of reticular hyperplasias are not discussed, nor is there any attempt to link these with the diseases of the ground substance of connective tissue, such as dermatomyositis or disseminated lupus erythematosus.

SCIENTIFIC PRINCIPLES IN THE DESIGN AND CHOICE OF OINTMENT BASES. H. BERRY, Brit. M. Bull. **3**:182, 1945.

When oils or fats are absorbed by the skin, the main route is via the hair follicles and through the sebaceous glands. The intact epidermis itself is not penetrated to any appreciable extent. In general, the skin is impervious to most aqueous preparations, although certain medicaments have the faculty of penetration and absorption irrespective of the medium in which they occur; mercury and the mercurials, methyl salicylate, salicylic acid and boric acid are capable of passing through living intact skin.

The condition of the skin may be the determining factor in deciding on an ointment base. On an excessively dry skin an oil in water emulsion may be used, while in seborrhea a water in oil emulson might be preferable, while petrolatum should be avoided. A purely oleaginous base such as petrolatum has been criticized in that (*a*) its greasiness interferes with radiation of heat from the skin, (*b*) it does not mix with or absorb serous discharge and (*c*) it is disliked by the patient because of its greasy and clothes-soiling character. Of the bases producing water in oil emulsions, wool fat and wool alcohols are the most important. Wool alcohol is a brown wax, representing a purified fraction of wool fat and practically superseding it in use in England. Blended with the paraffins it constitutes unguentum alcohol lanae (ointment of wool alcohol) and with 50 per cent water it is official in the British Pharmacopoeia as unguentum aquosum (hydrous ointment). Cetyl alcohol is a white odorless waxlike solid which, when admixed with a fatty paraffin base, will emulsify water or aqueous solution in the form of water in oil emulsions. This is used to augment the action of wool fat or wool alcohols.

BAKER, Chicago.

A REPORT OF THE TREATMENT OF SEVEN CASES OF GRANULOMA VENEREUM WITH PENICILLIN. F. BOYD TURNER, M. J. Australia **2**:366 (Dec. 1) 1945.

Seven patients with granuloma inguinale that had not responded to injections of the various antimony preparations were treated with penicillin by parenteral administration and local application. Two of the patients died. Penicillin had no direct effect on the granuloma inguinale. It cleared up the secondary infection and so allowed the specific treatment with antimony to be more effective. The

Kline test elicited positive reactions in 4 and negative reactions in 3 of the cases. The positive Kline reactions were unaltered fifteen weeks after cessation of penicillin therapy.

THE TREATMENT OF FURUNCULOSIS. J. V. DUHIG, M. J. Australia **2**:367 (Dec. 1) 1945.

Favorable response and usually permanent cure were obtained in over 500 cases of furunculosis by a combination of sulfonamide drugs and an autogenous vaccine. Vaccine is used to reenforce immediate cure and to confer immunity against recurrence. The preparation of the vaccine must be made with great care. The culture should be fifteen to sixteen hours old. It should be sterilized with a 0.5 per cent solution of phenol. The vaccine contains about 20,000,000,000 organisms per cubic millimeter. Doses of 0.25 cc. and 0.5 cc. and a stock dose of 1.0 cc. are given at intervals of five days for six to eight doses. A rest of three weeks is given, and a "booster" dose of 1.0 cc. is injected.

ON THE PRICKLY HEAT. FRANKLIN R. FAY and ERIC SUSMAN, M. J. Australia **2**:453 (Dec. 22) 1945.

A study was made of prickly heat occurring among 46 officers serving in one of the English King's Australian ships under a wartime regime in tropical waters. Twenty-six of the officers were afflicted with maliaria rubra. Factors which increase the liability of a person to prickly heat are age over 30 years, fair skin, "highly strung" type of mental makeup, large intake of salt, working and sleeping below decks, high temperatures of place of work, long working hours, poorly ventilated clothing and perhaps the fact of belonging to blood group O (IV). There is no cure for miliaria rubra except to leave the tropics. A healthy stoicism toward this minor illness is advocated.

FRUMESS, Denver.

SOME REMARKS ON EPIDERMODYSPLASIA VERRUCIFORMIS. W. LUTZ, Dermatologica **92**:30, 1946.

One of two sisters who were presented in 1932 as having epidermodysplasia verruciformis or verruca plana juvenilis of a peculiar kind was inoculated with her sister's lesions, which were ground up in isotonic solution of sodium chloride. The inoculation was successful, while control tests on the patient with the solution alone gave negative results and resulted on a normal person only in transitory papular lesions.

The author states the belief that the positive reaction to the inoculation test decides the question of the diagnosis in favor of verruca plana juvenilis but that, however, a peculiar terrain is responsible for the unusual clinical picture. Is then epidermodysplasia verruciformis still a clinical entity? The author, who himself with Lewandowsky described the first case of this dyskeratosis and regarded it as a cutaneous dystrophy originating from a congenital germinal abnormality, is now inclined to consider the terrain on which the virus of the flat warts settles as unusual and different from that in cases of disseminated verruca plana juvenilis. This disposition of the skin may also be responsible for the development of malignant tumors which appear in some cases.

LUPUS ANNULARIS OF THE CERVICAL REGION SIMULATING TERTIARY SYPHILIS. A. ULLMO, Dermatologica **92**:80, 1946.

A man of 44 has had for the past five years on the right side of the neck a slowly growing annular lesion, which now measures 8 by 10 cm. in diameter. The borderline is 0.5 cm. wide, yellowish red, moderately infiltrated and not continuous. The center is whitish and scarred; it shows, however, in its middle some preserved hairs. Wassermann and Meinicke tests of the blood elicited negative reactions. Histologically, a band of infiltration occupies the papillary and dermal layers.

The infiltration consists of lymphocytes, epithelioid cells and numerous giant cells grouped in a tuberculous-granuloma-like fashion. The collagenous tissue and the elastic fibers are destroyed. The histologic picture speaks in favor of tuberculous lupus and against tertiary syphilis. The patient also has pleurisy; one significant finding is that of tubercle bacilli in the sputum. The reaction to the Pirquet test was negative; the Mantoux test in a dilution of 1:500 elicited a positive reaction. This form of annular lupus was first described by Brocq and Jacquet in 1890. The patient's general health is not impaired, although this form of cutaneous tuberculosis has been known for its virulence. Therapeutic trials with injections of mercury did not produce any significant results.

HELEN O. CURTH, New York.

TREATMENT OF BURNS OF THE FACE WITH GRENZ RAYS. M. BALTIN, Vestnik oftal. **23**:27, 1944.

Baltin treated a number of burns of the face and lids of second degree with grenz rays. The effect of the treatment was noticeable in a few days, as the oozing stopped, the scales disappeared and epithelization began. One week of daily irradiation was sufficient to obtain good results.

O. SITCHEVSKA. [ARCH. OPHTH.]

EPITHELIAL SYMPTOMS CAUSED BY VARIOUS DEFICIENCIES. J. WALDENSTROM, Acta dermat.-venereol. **23**:93 (March) 1942.

Certain lesions of the skin and the mucous membrane are of significance in the diagnosis of idiopathic hypochromic anemia. These are (1) fissure at the angle of the mouth, (2) burning sensation of the tongue, (3) spoon nails and (4) fissuring of the skin at the finger tips. The author contends that these changes may occur in patients whose blood has normal hemoglobin value but who get an amelioration of symptoms through treatment with iron. Waldenstrom feels that in these patients there is an iron deficiency without an accompanying anemia and that the disappearance of the symptoms following treatment with iron is therapeutic proof of his suppositions. He calls this condition "sideropenia."

These same symptoms can and do occur in persons who demonstrate deficiencies in factors of the vitamin B complex, and Waldenstrom regards iron as one of the members of this complex. These symptoms which seem to be common to hypochromic anemia, and to these deficiency states, respond promptly to treatment with the vitamin B factor, which is deficient.

It becomes evident that the lesions of the skin and the mucous membrane are really not innocent and nonspecific symptoms, but are instances of widespread deficiencies which cause general impairment of cell function. When this is recognized, a troublesome condition which has persisted for years may be cured in a few weeks.

ROBINSON, Washington, D. C.

Society Transactions

CHICAGO DERMATOLOGICAL SOCIETY

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April 18, 1945

Xanthomatous Biliary Cirrhosis with Flat Xanthomas of the Eyelids. Presented by DR. STEPHEN ROTHMAN and (by invitation) DR. H. KRYSA.

L. K., a white woman aged 46, noticed yellow spots about her eyes ten years ago. These spots appeared first below the eyes and a few years later on the upper eyelids. Six years ago several of these lesions were excised surgically, but more have since appeared and have grown and become confluent.

At present there are two sharply circumscribed, semicircular, slightly elevated, flat, yellow soft growths on each lower eyelid, with a sprinkle of five or six smaller lesions of similar character on each upper eyelid.

The patient gives a history of attacks of disease of the gallbladder intermittently for twenty years, with removal of gallstones in 1927 and subsequent relief from pain in the right upper quadrant of the abdomen for three years. After this, she suffered occasional attacks of severe pain in the right upper quadrant until 1938, when she became jaundiced and her stools became light and her urine dark. At that time the gallbladder was drained and removed. She suffered no further discomfort until 1940, when she again had minor attacks of jaundice and pain of short duration. In July 1944 she suffered from severe persisting jaundice, itching and severe pain.

A surgical operation performed at the Albert Merritt Billings Hospital through Dr. D. B. Phemister's service on Dec. 18, 1944, revealed no common bile duct but a bile-containing passageway in the region of the porta hepatis which was found to be an abdominal fistulous communication between the anterior wall of the common bile duct and duodenum and the right hepatic duct. A vitallium tube was inserted into the right hepatic bile duct superiorly and into the incision in the duodenum inferiorly.

The laboratory findings of interest were as follows: On Oct. 20, 1944 the serum lipid level was 1,310 mg., the total cholesterol level 390 mg. and the cholesterol esters content 255 mg. per hundred cubic centimeters. On Feb. 23, 1945, two months after the surgical intervention, the values were as follows: lipids, 1,280 mg.; cholesterol, 370 mg. and cholesterol esters, 305 mg. per hundred cubic centimeters. The van den Bergh direct test revealed 0.5 mg. and the indirect 0.8 mg. of bilirubin. The amount of plasma protein levels and the albumin-globulin ratio were normal.

A biopsy of one of the cutaneous lesions was made, and the histologic section showed a typical structure of xanthoma.

Xanthoma Eruptivum. Presented by DR. MICHAEL H. EBERT and DR. M. S. KAGEN.

G. K., a white man aged 28, presents an eruption on the extremities. The first lesions appeared on the legs about two months ago, and new ones appeared rapidly. During the patient's physical examination for induction into the Army four years ago, it was discovered that he was diabetic. He weighed 170 pounds (77 Kg.) at that time The diabetes remained untreated until recently. The patient now

weighs 123 pounds (56 Kg.). He drinks moderately. The cutaneous lesions have been tender to the touch but do not itch. About two weeks ago a physician thought that the lesions were pyoderma and administered a course of penicillin and sulfonamide compounds, without effect. The lesions are most numerous on the legs, especially over the calves, on the lateral and posterior surfaces of the thighs and on the buttocks, but they are also present on the elbows and the arms. When the patient was admitted to the hospital, the blood sugar content was 144 mg. per hundred cubic centimeters and the blood pressure was 140 systolic and 54 diastolic. He has been receiving 140 units of insulin per day for the past week and is still excreting sugar in the urine. The total cholesterol level of the blood serum was 500 mg. per hundred cubic centimeters.

The lesions are of two types: 1. There are raised, flat-topped, dull red papules varying from the size of a matchhead to that of a split pea. At present these are covered with adherent grayish crust scales. When the patient was first seen, one week ago, the lesions were inflammatory; many were surrounded by a bright red halo, and many of the crust scales were dark colored. On removal of the scales, however, there was no pus. When the skin was stretched with the fingers, the lesions had a distinctly yellow color. 2. There are pinhead-sized light yellow papules scattered among the other lesions and especially numerous on the buttocks.

In a histologic section taken from what appeared to be the center of a papule there was decided acanthosis, with a papillomatous folding of the outer portion of the epidermis. The spaces between the folds and the surface were covered with a nucleated crust scale containing a dried microabscess. The elongated papillae and the area below the epidermis were infiltrated with foam cells. In sections taken from other areas the foam cell infiltrate was in the midcorium, in the neighborhood of a hair follicle. In frozen sections stained with sudan III one sees small and large lipid granules. These are most numerous in the foam cells of the infiltrate and in the reticular cells of the small vessels of the papillae.

DISCUSSION OF THE TWO PRECEDING CASES

DR. CARL W. LAYMON, Minneapolis: Thannhauser, Magendantz, and Montgomery and Osterberg have pointed out the differences between xanthoma of the tuberous type and that of the disseminate type. Xanthoma of the palms and the soles occurs more frequently in xanthoma tuberosum and is especially frequent when hepatic disease is present. Lesions of the lids can be present in either the disseminate or the tuberous type.

DR. S. W. BECKER: I wondered how the diagnosis of biliary cirrhosis had been made. I did not see a note as to the operative findings. I agree with the diagnosis of xanthelasma.

DR. THEODORE CORNBLEET: The cholesterol content of the blood was not reduced in the two months following operation, when presumably the bile from the liver could empty into the intestine. During this period also there was no regression of the lesions. In another patient that I followed, there were multiple xanthomas, high values for blood lipids and jaundice. After an operation the jaundice gradually disappeared, but the levels of lipids in the blood remained unchanged. It would seem that the elevated values for fatty material are not explained by simple mechanical means. The deposits in the biliary system and in the skin would seem to depend on a common factor or factors. When deposits blockade the free flow of bile and result in jaundice, the disease is secondary then and not primary to the xanthomatous state.

DR. ARTHUR C. CURTIS (by invitation), Ann Arbor, Mich.: The first case was interesting because the patient had hyperlipemia. Dr. Hamilton Montgomery has previously emphasized the frequency of hyperlipemia and xanthelasma. Hyperlipemia appears in association with xanthelasma in 75 to 80 per cent of the cases. In a series of patients with xanthelasma, studied not long ago, the same incidence of hyperlipemia was found. The liver is the storehouse for fat as well as the store-

house for glucose. The relationship of choline and choline-like substances to the mobilization of hepatic fat has been studied considerably. However, in most of the cases of xanthelasma in which the blood fat contents were determined and tests of hepatic function made, I have been unable to prove any actual hepatic damage. The patient seen today with xanthelasma has a congenital absence of the common bile duct. In the past there must have been a considerable amount of fat stored in the liver, and, according to the laboratory data, two months after operation there still is an enormous amount of circulating blood cholesterol.

Several years ago Dr. John Sheldon and I reported on the study of such a patient. A young man with diabetes had a rapid onset of xanthomas and then later suffered diabetic coma. During this period he had hyperlipemia, the blood lipid content being 12 per cent, and xanthoma diabeticorum. He was given a high carbohydrate diet and insulin. The hyperlipemia disappeared, and the blood fats returned approximately to normal levels. The amount of insulin was then slowly decreased. As acidosis began to develop, the hyperlipemia recurred and we allowed him to return to a mild diabetic coma. At that time the blood fat content had again risen to more than 6 per cent. His xanthomatous lesions disappeared during the period when the blood fat levels were normal. We did not maintain his hyperlipemia long enough to get a reappearance of the xanthomatous lesions.

DR. RUBEN NOMLAND, Iowa City: I had an opportunity to study 3 patients with damage to the liver and the development of xanthomatous lesions associated with this damage. Two of them had obstruction of the common bile duct with prolonged jaundice, with decided increase of the blood fat and cholesterol levels. One of the 2 had xanthelasma and the other a widespread mixed type of both flat and tuberous xanthomas. The third patient had prolonged jaundice over a great many years and had tuberous lesions mostly. At operation nothing was found to explain the long-continued jaundice, and the patient had no obstruction to the bile ducts. She had enlarged glands in the retroperitoneal area and xanthomatous infiltration of these glands and of the gallbladder.

I think that damage to the liver with prolonged jaundice occasionally disturbs the metabolism of cholesterol and other lipids, with the development of hyperlipemia and similar states and the subsequent formation of xanthomatous deposits in the skin in the form of either flat or tuberous xanthomas.

DR. STEPHEN ROTHMAN: If I understood Dr. Laymon correctly, he said that xanthomatous biliary cirrhosis is always connected with the tuberous form of cutaneous xanthomatosis. This is not borne out in the literature (see Thannhauser, S. J.: Lipidoses, in Christian, H. A.: Oxford Loose-Leaf Medicine, New York, Oxford University Press, 1940, vol. 4, pt. 1, pp. 3-365). In answer to Dr. Becker's question, the association of xanthomas with hypercholesteremia, persistent jaundice and a large cirrhotic liver is well known to be a distinct form of primary essential xanthomatosis. It is true that in our case at operation no xanthomatous infiltration was seen in the bile ducts, but it is also true that in the liver the nests of xanthoma cells ultimately undergo destruction and scar tissue develops. Xanthomatous biliary cirrhosis is the manifestation of a primary systemic disease of histiocytic elements. High lipid values as well as xanthomatous obstructive infiltration of the bile ducts and xanthomas of the skin, blood vessels and other parts of the body are due to this systemic disease. It is not to be expected that after release of the biliary obstruction the lipid values of the blood will change. Generalized intensive pruritus is rather common in this disease.

Urticaria Pigmentosa with Bullae. Presented by DR. LOUISE E. TAVS (by invitation).

M. L., an infant, had an eruption at the age of 2½ months. It appeared first on the abdomen but subsequently involved the legs and the back. When the infant was 9 months old the scalp became involved with oozing and crusting, and the occurrence of bullae was noticed first when the infant was 5 or 6 months old.

Simultaneously with the involvement of the scalp numerous bullae appeared. Remissions occur with rapid exacerbation within a few hours. Pruritus has been moderate. The patient had one episode of generalized intense flushing of the uninvolved skin with paling of the lesions lasting for five minutes.

The mother and maternal grandmother are said to have migraine headaches. A paternal great-aunt had eczema. One paternal cousin has a "birth mark" involving the leg, and another was born with "brown patches."

The patient's past history reveals that she had chickenpox one month ago. She has not been vaccinated but has received immunization therapy for diphtheria and whooping cough.

Examination of the patient at present reveals oval discrete yellowish brown and reddish brown nodules, some with peripheral erythematous zones. There are also pigmented macules, and previous examinations showed bullae varying in size up to a dime, which were tense and filled with serous fluid. The lesions are present on the scalp, the lateral aspects of the cheeks, the neck, the torso and the extremities, and Darier's sign is positive.

The blood cell count revealed the hemoglobin content to be 70 per cent; erythrocytes, 3,950,000, and leukocytes, 15,400, with a differential count of 39 per cent neutrophils and 61 per cent lymphocytes. The blood cholesterol level was 170 mg. per hundred cubic centimeters of serum. The urine was normal.

A biopsy was performed on a bullous lesion of the left arm. A histologic examination of a section showed slight edema of the epidermis. The papillae were edematous, and just below them there was a densely packed band of cellular infiltration from which linear strands of cells extended downward. The polychrome methylene blue stain showed many of these cells to be mast cells. Staining with sudan III showed a considerable amount of fat in the subpapillary band and in the vertical cellular strands.

The patient has had no treatment up to the present.

DISCUSSION

DR. CLARK W. FINNERUD: Years ago I reviewed the literature on urticaria pigmentosa. Though I have forgotten the frequency of occurrence, one of the rarest manifestations was xanthoma-colored lesions. The rarest manifestation was bullae. These rare features were well illustrated in this patient.

DR. S. W. BECKER: I was impressed by the fact that the regions in which the bullae had appeared were edematous, as though the child had been scratching or some one had rubbed them.

DR. MARCUS R. CARO: Another remarkable feature in this case is the histologic picture. Staining for fat with sudan III showed a considerable amount of fat in the corium. On going over the literature on urticaria pigmentosa, I was amazed at the number of cases in which the lesions were described as being xanthoma-like, but in none of them could I find that fat was demonstrated. The presence of fat as well as bullae makes this case unusual.

Striae Distensae. Presented by DR. CLEVELAND J. WHITE.

D. S., a girl aged 14, noticed some "peculiar" lines on the upper portion of the thighs and buttocks about six weeks ago. A physical examination at that time showed a healthy-appearing young girl with many linear striae of glistening appearance symmetrically distributed over the areas mentioned. There have been no recent illnesses. All the laboratory examinations have so far revealed no abnormalities, and a roentgenologic examination showed that the sella turcica is normal. The tonsils are large and apparently infected.

The patient is presented because of the apparent idiopathic appearance.

DISCUSSION

DR. FRANCIS E. SENEAR: The girl said something that was not in the history: that she had gained 15 pounds (7 Kg.) in the last year. That might be an explanation for the development of the linear striae.

DR. S. W. BECKER: I questioned her about the gain in weight. She said that she had gained 15 pounds, which settled in the involved regions.

DR. MAURICE OPPENHEIM (by invitation): One of the interesting features is that the striae distensae are present in such a young girl. One can see women who have given birth to many children without a trace of striae; on the other hand, one can find numerous striae gravidarum in women who have had one abortion. Striae distensae can be caused by conditions like typhoid, meningitis and tuberculosis, mostly after a long rest in bed, and are not due only to a rapid growth in the length of the body. As I stressed in my articles, there are two factors present: first, a congenital weakness of the elastic fibers and, second, some toxic or endocrine influence which causes these striae distensae. They are not always perpendicular to the direction of growth. They are without doubt due to a congenital weakness of the elastic fibers, as in other cases of cutaneous atrophy. Growth alone or hypertension alone does not cause striae (Oppenheim, M.: Atrophy of the Skin, in Jadassohn, J.: Handbuch der Haut- und Geschlechtskrankheiten, Berlin, Julius Springer, 1931, vol. 8, part 2).

DR. MICHAEL H. EBERT: Some years ago I reported 2 cases of hypertrophic striae in young women. Since then Dr. Ormsby and I have observed several such cases, and sometimes considerable mental disturbance is caused to the mother as well as to the child. In the hypertrophic type the lesions stand out instead of being depressed. Histologically, there is not only a disturbance of the elastic tissue but also an inflammatory reaction. If these cases are followed for a number of months, the lesions are found to subside eventually. I agree with Dr. Oppenheim that not all these conditions are on an endocrine basis. That is well illustrated by tumors of the adrenal glands and other endocrine tumors associated with an increase in weight and blood pressure which cannot be explained on the basis of tension alone. This condition is even more evident in the hypertrophic lesions of adolescence, which are not common but which do occur.

DR. STEPHEN ROTHMAN: The obvious cause of these striae distensae has been that the patient gained 15 pounds in a short time. I wonder if the endocrinologists are right when they emphasize that in the Cushing syndrome the striae are purplish. The color of striae obviously depends on the state of the venous circulation, and I saw purplish striae in cases like the one presented without any evidence of Cushing's syndrome.

DR. ARTHUR C. CURTIS (by invitation), Ann Arbor, Mich.: I do not think that the color of the striae is of diagnostic importance in Cushing's syndrome. I have seen purple striae in patients who did not have Cushing's syndrome.

DR. CLEVELAND J. WHITE: I did not get an accurate history of the onset from either the mother or the patient. The latter had had acute tonsillitis, and I wondered if the enlarged tonsils might be a factor.

Erythema Induratum (Bazin). Presented by DR. STEPHEN ROTHMAN and (by invitation) DR. A. L. SHAPIRO.

D. J. M., a white man aged 44, a cattle buyer, was first examined in the University of Chicago Clinics on Aug. 12, 1943, when a diagnosis of far advanced tuberculosis of the lungs was made. In November and December 1943 he had a three stage thoracoplasty, after which he has gradually improved so that he is now able to work regularly. In September 1944 there developed the dusky red, firm, slightly tender, cutaneous-subcutaneous node now present on the calf of the right leg. There has been only a small increase in size since its onset. Lateral to this lesion the patient also presents an atrophic depressed scar, a residual of a similar erythematous lesion which appeared several months previous to the present infiltrate and which healed spontaneously after a few months' duration.

Previous to the thoracoplasty his sputum gave positive reactions for tuberculosis (Gaffky scale, III or IV). All the many specimens examined after the operation failed to yield tubercle bacilli. On August 16, a guinea pig was inoculated with

sputum, and it was found to have no tubercle bacilli when killed on October 18. The Wassermann and Kahn reactions of the blood were negative on Aug. 22, 1943. There are no recent laboratory reports available on the blood or urine. A roentgenogram of the chest on Sept. 15, 1944 showed no sign of tuberculous activity.

A histologic examination of a section taken from the cutaneous lesion showed defined areas of infiltration in the lower part of the dermis and in the subcutis, consisting of lymphocytes and epithelioid cells. Many of the infiltrates were around thickened blood vessels. There was an unusually large number of leukocytes also.

DISCUSSION

DR. LOUIS H. WINER, Beverly Hills, Calif.: I was interested in the histologic section because there was none of the proliferation that is seen in erythema nodosum, namely, a proliferation of the leukocytes around the vessels. In this patient the subcutaneous fat was undergoing a liquefaction necrosis, and it seems as though the adjacent cells contained phagocytic remnants of this fat. Therefore, I offer a diagnosis of nonsuppurative panniculitis in this case.

DR. M. J. REUTER, Milwaukee: I did not see the sections. Dr. Winer brought up the question of inflammatory infiltration of the subcutaneous fat tissue. I have always felt that this was one of the characteristics of erythema induratum.

Blastomycosis. Presented by DR. MAURICE OPPENHEIM (by invitation).

E. G., a white man aged 46, first noticed a small pustule below the left eye in November 1944. Other pustules appeared in the periphery. Various ointments were applied without result. The pustules finally became coalescent. An operation was performed, and finally six roentgen ray treatments were given, altogether 1,500 r being used. Since no improvement was observed, he was referred here for further observation and treatment.

A physical examination reveals an oval elevated new growth of skin 0.5 cm. below the left eyelid, 3 cm. long and 2 cm. wide. The surface is cauliflower-like, covered partially with crusts. The color is gray, and the center is depressed. The surrounding skin of the inner margin of the tumor-like growth is dark red and shows small yellow pustules, partially superficial and partially deeper. This surrounding inflammatory area is small and sharply defined against the normal surrounding skin. The growth is hard; finger pressure is not unduly painful, and there is no spontaneous pain. The lymph nodes in the preauricular area are not enlarged.

The smear of material from the pustules showed few double-contoured large bodies with a granular protoplasm; no budding forms were seen.

The blood cell count showed a hemoglobin content of 95 per cent; erythrocytes, 4,800,000, and leukocytes, 10,000, with a differential count of 45 per cent lymphocytes, 2 per cent monocytes, 53 per cent leukocytes and no eosinophils; the color index was 0.9. The Kahn reaction of the blood was negative.

The biopsy section taken from the margin revealed a wartlike growth with acanthosis, hyperkeratosis, parakeratosis, horn pearl formation and papillae growing in every direction. One part of the histologic section showed ulcerations with lymphocytosis and many leukocyte elements. The base of the ulcerated area was formed of round cells and many plasma cells mixed with giant cells of the Langhans type. The papillary layer, the subpapillary layer and the reticular layer of the cutis were infiltrated with lymphocytic elements, with many plasma cells and few giant cells. In some of the giant cells of the ulcerated area double-contoured, round corpuscles with a granulated protoplasm were visible; budding forms were also present.

Intracutaneous tests with trichophytin and oidiomycin elicited strongly positive reactions.

Treatment with potassium iodide, 10 Gm. in 180 cc. of water, was started, the patient taking 1 tablespoon daily, the dosage being increased to 5 tablespoons a day, or about 5 Gm. The lesion shows decided improvement. No organisms could

be found in the last smears of material from the small abscesses, which have diminished in number.

DISCUSSION

DR. HARRY M. HEDGE: There was a similar case at Northwestern University some years ago, the patient being a Negro porter. He had lesions on both cheeks and on the hands and two lesions on the buttocks. Large doses of potassium iodide were tried, and the patient got better and then worse interchangeably. Finally, a special electrode was made for the electric cautery, and with a broad, straight wire these lesions were cut off until they bled profusely. The lesions healed well, with little scarring. The lesions on the buttocks were about 10 cm. in diameter, the one on the hand 13 cm. and the one on the cheek a little smaller.

DR. MAURICE OPPENHEIM (by invitation): I think that this case deserves a little more discussion because the disease is one of the local types of blastomycosis of the American type on account of the location, close to the eye. I was the first one to present in Vienna, Austria, in 1903, a case of local blastomycosis of the American type (Löwenbach, G., and Oppenheim, M.: Beitrag zur Kenntnis der Hautblastomykose, *Arch. f. Dermat. u. Syph.* **69**:121-144, 1904). Later 4 cases of a local type of blastomycosis could be observed at the Neumann and Finger clinic in Vienna (Internationale Congresso di Dermatologia e Sifilografia, Roma, April 8-13, 1912). (See also Oppenheim, M.: Die Hautblastomycose, *Wien. med. Presse* **46**:869-879, 1905.)

Mycosis Fungoides. Presented by DR. HERBERT RATTNER and (by invitation) DR. H. H. RODIN.

H. C., a Negro aged 56, was admitted to the dermatologic clinic of the Cook County Hospital on April 5, 1945, with the complaint of a generalized pruritic eruption of about eighteen months' duration. He stated that he was in good health until November 1943, when an itching eruption in the scalp developed, which failed to respond to local treatment. Within a period of five months the eruption spread across the face and over the entire body. At the onset the pruritus was severe enough to interfere with the patient's sleep, but in the past few months he has been sleeping better after receiving injections which "made him feel hot." At present he is able to sleep well, and in general he feels well. He stated that tests of the blood for the past five years, taken as a preemployment requirement, have given normal results.

His past history is essentially irrelevant, with the exception of the usual childhood diseases. He had smallpox about 1905 and gonorrhea in 1935.

The presenting dermatitis consists of a generalized eruption composed of areas of hyperpigmentation, numerous oval and circinate infiltrated plaques from the size of a quarter to that of a dollar, composed of lichenoid papules, and several walnut-sized to egg-sized, round, smooth tumors located over the right scapular and lumbar regions.

The serologic reaction of the blood was negative.

DISCUSSION

DR. EDWARD A. OLIVER: It is now realized that mycosis fungoides among Negroes is not so rare a condition as formerly thought. Several months ago at a meeting of this society I showed a Negro with generalized exfoliative dermatitis with the microscopic diagnosis of lipomelanotic reticulosis. This patient now has typical mycosis fungoides.

Melanodermatitis (Occupational). Presented by DR. OTTO H. FOERSTER and DR. HARRY R. FOERSTER, Milwaukee.

The patient first noticed lesions on the dorsa of the forearms a year ago as red itching elevations. He squeezed a waxlike substance out of some of these and did not observe vesiculation. The lesions increased in number and extent, fusing in

places to form patches. A brownish discoloration was first observed four months ago, at which time the eruption had extended over the forearms to the flexor surfaces of the elbows, with a few lesions above the elbows and on the dorsal surfaces of the hands. In July 1944 he observed on the cheeks small red spots, which increased in size and number to form large red blotches that became brownish several months later. The eruption was most pronounced on the cheeks and about the jaws and extended to the forehead and the neck a month ago. A few inflammatory nonpigmented patches appeared on the legs several months ago.

The patient is now employed as supervisor of a tool-grinding room, where he works from ten to twelve hours a day in a dusty atmosphere. There has been exposure to lubricating and cooling oils, carbide dust and emery dust for three years, and since the dermatitis developed he has observed severe smarting and burning sensations when a mixture of dust and oil gets on his face. There is no history of exposure to pitch or tar. There has been no medication, and the dermatologic and medical histories are otherwise irrelevant. The only cosmetic used has been a shaving cream.

The patient presents a diffuse and patchy eruption of macules and lichenoid and follicular papules with chronic inflammation and intense pigmentation. The lesions are confined to the face, neck, upper extremities and legs. There are no lesions of the mucous membranes. Otherwise the physical examination revealed nothing abnormal. The blood pressure is 100 systolic and 80 diastolic.

The blood cell count and the urine were normal. Patch tests made with seven samples of materials to which the patient is exposed at work showed no distinctly positive reactions. The blood cell count showed a hemoglobin content of 85 per cent; erythrocytes, 4,860,000, and leukocytes, 12,400, with a differential count of 2 per cent stab cells, 38 per cent lymphocytes, 2 per cent eosinophils, 2 per cent monocytes, 1 per cent basophils and 55 per cent neutrophils.

The histologic examination of a section from one of the lesions showed hyperkeratosis and parakeratosis with follicular plugging, a well developed stratum granulosum epidermidis, a thinning of the rete and edema and disintegration of the interpapillary pegs. There was pronounced edema of the papillary and the subpapillary layers with a well developed cellular infiltrate, predominantly lymphocytic, diffuse in some areas but chiefly perivascular. The capillaries were dilated and edematous. There was a dense lymphocytic infiltrate about the deeper vessels and cutaneous glands. There were no plasma cells.

DISCUSSION

DR. H. E. MICHELSON, Minneapolis: I think that this is an interesting case and offers much opportunity for speculation. One thing that strikes me in all patients with lichen planus and lichen-planus-like eruptions is the tendency toward pigmentation. There must be something causing these eruptions that stimulates production of pigment. Undoubtedly when due to bismuth and arsenic this disease is more aggravated.

DR. HARRY R. FOERSTER, Milwaukee: I thought this case sufficiently interesting to present because of the intense melanosis of the face. If that were the only condition present, a differentiation from poikiloderma of Civatte would be suggested. There was reticulation in the arrangement of the pigmentation on the face as well as lichenoid dermatitis, particularly on the forearms. In industry most of the eruptions are associated with exposure to pitch or tar and to sunlight. In this instance the dermatitis developed on the forearms and the face originally, apparently as an oil folliculitis. The pigmentation has not been so pronounced on the arms at any time as on the face. The dermatitis first developed in July, but the patient had not been working out of doors at the time. He said that whenever a mixture of emery or graphite, shop dirt and oil contaminated his skin he observed intense smarting and irritation, suggesting dermatitis as the first manifestation.

In this case there were features suggestive of lichen planus and also a form of lupus erythematosus, but the histologic examination serves to rule out both these

diseases and the history favors an occupational and external cause. A similarity to melanodermatitis lichenoides and melanosis of Riehl is suggested, particularly by the facial eruption. A systolic blood pressure of 100 might suggest the possibility of an adrenal factor in the predisposition to pigmentation.

Idiopathic Multiple Hemorrhagic Sarcoma (Kaposi). Presented by DR. S. J. ZAKON.

A. G., a Jewish man aged 72, born in Rumania, states that he began to notice red blotches on his hands about eight months ago. There were no objective symptoms. His general health is fair, and he is convalescing from a herniotomy. He is a watch repairer by trade.

An examination on April 16, 1945 revealed reddish brown and bluish red discrete nodules and plaques on the dorsa of the hands, the extensor and flexor aspects of both forearms, the outer aspect of the right thigh, the tip of the nose and the lower lip, involving the vermilion border. Lesions were also present on both legs, on the dorsal aspect of the second toe of the left foot and on the large and third toes of the right foot. These lesions apparently were of much longer duration.

DISCUSSION

DR. THEODORE CORNBLEET: There were nodules on the tongue which I presumed to be similar to those on the skin. This would be the first example that I have seen of such lesions on the mucosa.

Unexplained Fluorescence Phenomenon. Presented by DR. THEODORE CORNBLEET and DR. H. C. SCHORR.

O. T. a married Negro woman aged 40, has had a lesion on the left calf for some time. This is polycylic in character, subacute without subjective sensations. Examination under the Wood light revealed fluorescence, most evident on the right leg, especially on the anterolateral surface. This fluorescence had two qualities: a central zone that was more intense and yellowish and, surrounding this, a more diffuse zone, with outlying islands for some distance beyond, brilliantly white. The fluorescence was less evident on the left leg but absent over and near the lesions. Scales were removed and examined, and they fluoresced (white). The same scales were observed directly for fungi, but none were found.

The patient works in a bakery and uses a goodly amount of yeast in making large quantities of dough. She says that she does not take medicines. No applications were made to the affected areas. The serologic reaction of the blood was positive.

DISCUSSION

DR. THEODORE CORNBLEET: This woman gave no history of putting petrolatum on her legs. I questioned her again, and she maintained that she had not used petrolatum for the last nine months. An area which was swabbed with purified benzine U. S. P. continued to impart its fluorescence.

DR. EDWARD A. OLIVER: Often on examining children's scalps one will find fluorescent particles, probably due to soap around the neck or in the ears. I do not think that that situation is unusual.

DR. THEODORE CORNBLEET: I have no explanation to offer for this phenomenon. I do not think that it is remarkable. I have been using the Wood light in examining many skins, and once in a while I find fluorescent particles. In my experience, however, it is not common to find cutaneous fluorescence similar to that found in this case. The pattern in this case has been more or less the same. It probably will be found that some extraneous substance is causing the fluorescence. Porphyrins do not behave this way. There is nothing in this woman's history or examination otherwise that would give a lead for association. Otherwise one might look for other patients with similar histories to see if they have such phenomena of fluorescence.

Disseminated Subacute Lupus Erythematosus (?). Presented by DR. STEPHEN ROTHMAN and (by invitation) DR. Z. FELSHER.

P. R., a white woman aged 34, was first seen in the metabolism clinic of the University of Chicago Clinics on Nov. 22, 1944. At that time she complained of generalized weakness, glandular swelling and painful joints of one year's duration. For the past year she had also had attacks of cyanosis of the fingers in cold weather. There was also a history of several attacks of "pleurisy" since Easter 1944. The patient was admitted to the Albert Merritt Billings Hospital on Dec. 4, 1944 and remained there until Jan. 5, 1945. A physical examination revealed generalized emaciation; discrete, large, firm lymph nodes of the neck, and enlargement of the left ventricle, with systolic murmurs at the base and the apex. The fingers showed erythematous patches on all terminal phalanges surrounding the finger nails but nothing around the toe nails.

The agglutination test for Brucella gave negative results. Histologic study of a section taken from a lymph node showed only hyperplasia and some fibrosis. Cultures of the blood were sterile. A catheterized specimen of urine showed a few red blood cells, a few hyaline casts and a few white blood cells. The blood chemistry showed a normal value for nonprotein nitrogen. The blood cell count showed a hemoglobin content of 9.5 Gm. and an erythrocyte count of 3,200,000; the leukocyte count ranged from 4,600 to 7,000 during the patient's stay in the hospital. The differential blood cell count was normal. The Wassermann reaction was anticomplementary, and the Kahn reaction was negative. A roentgenogram of the chest revealed that the heart was 15 per cent oversized, the pulmonary fields were clear and there were no adhesions. An electrocardiogram showed a deviation of the right axis, with other findings within normal limits. A roentgenogram of the fingers showed mild periarticular osteoporosis.

The results of the sternal puncture were noncontributory. No evidence of amyloid disease was established by the congo red test. Normal hepatic function was indicated by the hippuric acid test. The urine concentration test showed normal renal function, but the urea clearance test showed slight impairment. The chemical examination of the blood revealed a total plasma protein content of 10.05 mg. per hundred cubic centimeters; the albumin-globulin ratio was reversed (0.55), the albumin content being 3.58 Gm. per hundred cubic centimeters and the globulin 6.47 Gm.

A biopsy was performed on a specimen from a finger, and a histologic section revealed a normal epidermis, fibrotic connective tissue in the upper corium and collagen degeneration in the midcorium and deep corium. There was no atrophy of the sweat glands.

DISCUSSION

DR. FRANCIS E. SENEAR: I thought that it was rather interesting to contrast this patient with the one shown in the Cook County Hospital who had definite involvement at the nail fold posteriorly. The patient shown today had such exaggerated lesions along the lateral nail folds. On three fingers of the left hand, on the ulnar side particularly, she had lesions of that type.

DR. LOUIS H. WINER, Beverly Hills, Calif.: The histologic picture is not that of lupus erythematosus, because it lacks the islands of lymphocytic infiltration seen in this disease. On an examination of the cutis histologically one sees that the vessels are disintegrated much as in periarteritis nodosa. In periarteritis nodosa the larger blood vessels are also involved, whereas in this case they are only the small vessels. I have never seen anything exactly like this microscopically, but I cannot offer a diagnosis.

DR. FRANCIS E. SENEAR: I should like to ask Dr. Winer if in some cases of periarteritis nodosa one does not find involvement of the small vessels as well as the large ones.

DR. LOUIS H. WINER, Beverly Hills, Calif.: Some months ago Dr. Michelson and I showed a case to this society in which the small vessels were involved.

DR. ARTHUR C. CURTIS (by invitation), Ann Arbor, Mich.: I certainly do not know of any quick or rapid method of curing lupus erythematosus of the acute type. When a patient presents an acute lesion such as this woman does, the prognosis should be guarded. I know of no way of telling whether the disease will become subacute or disseminated. It is my experience that in many cases of this type the disease becomes worse, disseminated lesions develop and the patient dies.

The organism found in the blood of a patient with acute disseminated lupus erythematosus, sent to me by Dr. Mitchell, was identified as a pleuropneumonia-like organism. To date no one has described this organism as being an etiologic factor in human disease. It has been described as occurring in animals, and investigators interested in rheumatoid arthritis have been able to produce a form of arthritis in animals with this organism. I have taken a few specimens of blood from my own patients with lupus erythematosus but have been unable to obtain a similar organism. The appearance of this bacterium in the specimen sent to me by Dr. Thompson and Dr. Mitchell may have been a contaminant, or my inability to grow it may have been due to the mediums used.

DR. EDWARD A. OLIVER: Inasmuch as the internists are taking so much interest in lupus erythematosus of the disseminated type, I should like to ask Dr. Curtis whether he would like to discuss the work of Dr. Rich and his associates at Johns Hopkins Hospital on lupus erythematosus and periarteritis nodosa.

DR. ARTHUR C. CURTIS (by invitation), Ann Arbor, Mich.: I imagine that many of the members heard Dr. Rich when he talked before the Chicago Medical Society two months ago. His conception of the cause of periarteritis nodosa is that of a hyperergy produced by certain things, such as a foreign protein or a sulfonamide drug. The latter may explain the increase in periarteritis nodosa.

Lupus erythematosus and periarteritis nodosa are being diagnosed by internists oftener than they have been in the past. This may, I think, be due to awareness of the diseases, for Osler said that "the incidence of a disease in any community is in proportion to the acuity of the doctors in that community."

DR. S. W. BECKER: In line with the remarks of Dr. Winer, when I examined the patient I noted that the lesions were telangiectatic rather than inflammatory, as in lupus erythematosus. There is a group of telangiectatic lesions associated with infection. The patient could have a generalized infection which produced the arthritis and the telangiectasia. I do not believe that a diagnosis of acute lupus erythematosus can be made from the clinical picture presented today.

DR. STEPHEN ROTHMAN: In the histologic section presented the collagen degeneration is definite and indicates lupus erythematosus. I am unable to comment on the changes in the vessels. Periarteritis nodosa is a highly improbable diagnosis because clinically there is no nodule formation and the blood does not show eosinophilia. The low white cell count and the reversed albumin-globulin ratio are in favor of lupus erythematosus. Telangiectases could be seen around the nails from time to time.

Heat and Emotional Urticaria. Presented by DR. STEPHEN ROTHMAN and (by invitation) DR. R. E. GREEN.

M. H., a white woman aged 36, was first seen in the dermatologic clinic of the University of Chicago Clinics on April 6, 1945. Her complaint was that for the past ten years "hives" developed all over her body whenever she was subjected to heat, physical stress or an embarrassing situation. The illness began when the patient became excited about diving off a high board. She finally dived, and she noted hives on coming out of the water. Since that time, except for some slight variations in intensity, she has experienced similar attacks, always preceded by a pounding heart and a flushed face, whenever she takes a hot bath, goes from a cold to a hot environment, exercises or feels embarrassed. One summer she was free from attacks after exposing herself to the sun for considerable periods early in the season. In the following seasons, however, sun baths were unsuccessful in suppressing the attacks. This patient is not an emotionally labile person.

A general physical examination revealed no essential abnormalities, and the laboratory findings were noncontributory. An injection of 0.1 cc. of a 1:1,000 solution of mecholyl chloride produced a decided wheal in this patient, whereas in control patients there was no whealing present. The patient was given a hot bath at a temperature of 46.5 C. for five minutes, and generalized urticaria consisting of densely distributed wheals 2 to 3 mm. in diameter and diffuse erythema immediately developed. Areas not immersed in the hot water were equally involved. There was no change in the blood cell count or the cell volume during this test. Radiant energy (the patient remained in a sweat chamber with a temperature of 59 C. for one hour), ultraviolet rays, infra-red rays and 0.5 mg. of neostigmine methylsulfate given subcutaneously failed to cause urticaria. By comparison of the sweating reaction of this patient with those of normal patients in the heat chamber and in the acetylcholine test, it was found that the patient's sweating activity was greatly decreased.

Passive transfer of the heat sensitivity by the Prausnitz-Küstner technic could not be accomplished.

The patient has been given daily intradermal injections of mecholyl chloride in an attempt to desensitize her. Although the urticarial response to these injections is still great, she notices a subjective improvement and is now able to take long walks with no urticaria resulting, formerly an impossibility.

The urticarial reaction to acetylcholine bromide 1:1,000 is demonstrated on the patient's arm.

DISCUSSION

DR. CLARK W. FINNERUD: I should like to ask Dr. Rothman if he has had any success in treating light allergy or cold allergy by this or any other method.

DR. STEPHEN ROTHMAN: On record I have 3 female patients with emotional and heat urticaria. Two responded well to desensitization with acetylcholine. They were young, light blonde, poorly pigmented Scandinavian girls in whom emotional stimuli caused most trouble. The patient presented today is a well balanced person who does not become excited easily. Her urticaria in most instances is elicited by heat stimuli. She gets emotional urticaria only in situations which make her blush.

(I want to add that the improvement after the administration of mecholyl chloride proved to be only temporary in this case. I did not succeed in desensitizing the patient to acetylcholine.)

Lichen Nitidus. Presented by DR. STEPHEN ROTHMAN and (by invitation) DR. D. J. NIEDERMAN.

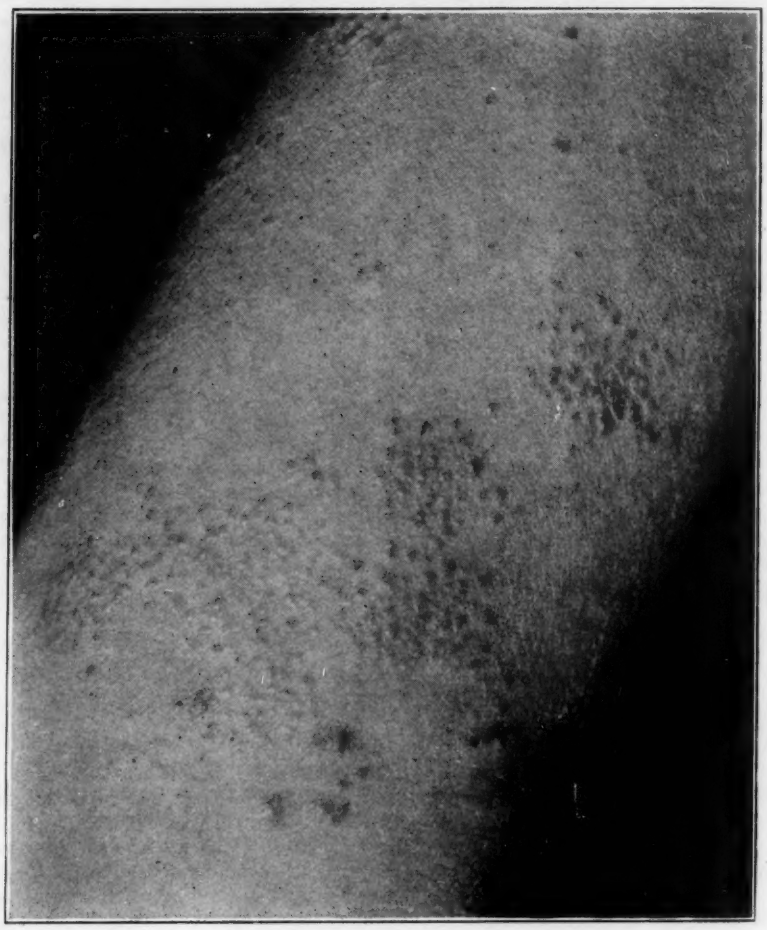
D. B., a white boy aged 6 years, was first seen in the dermatologic clinic of the University of Chicago Clinics on March 26, 1945 with a history of having had a rash on his forehead, legs and arms for three months with no subjective symptoms. Six months before his visit to the clinic the family moved into an apartment where a woman had just died of tuberculosis. The family lived there for three months, and the rash was first noticed at the time of moving out of this apartment. The patient was born in a mining community in Kentucky, where the milk may have been unpasteurized. The child has apparently been in good general health except for continuous colds for one year. His past history reveals measles at the age of 4 years and impetigo one year ago. He has just recovered from chickenpox.

A physical examination revealed enlarged, infected tonsils, carious teeth, a mucous discharge and obstruction of the nose and moderately enlarged, freely movable lymph nodes in both axillas. Fluoroscopic and roentgenologic examinations showed a normal chest. The mother's chest also was normal on fluoroscopic examination.

Tuberculin tests were performed on March 29 and April 17, 1945, with an intradermal injection of old tuberculin in a 1:1,000 dilution; the reaction was negative. Gastric lavage washings were inoculated into guinea pigs yesterday.

Examination at present reveals pinhead-sized globular or semiglobular lichenoid papules with shiny surfaces arranged in groups on the forehead, face, trunk and extremities, with no characteristic distribution. The genital region is free.

A histologic study of a section taken from the lesions revealed a normal epidermis except above the infiltrates, where it was compressed to a thin plate with destruction of its lower surface. There were two sharply circumscribed round superficial infiltrates pressing hard against the epidermis. They consisted



Lichen nitidus.

of lymphocytes, epithelioid cells, fibroblasts and giant cells. One of the infiltrates surrounded a follicular infundibulum; the other did not. There was a slight perivascular infiltration of the subpapillary plexus. The connective tissue was normal.

DISCUSSION

DR. H. E. MICHELSON, Minneapolis: Lichen nitidus when first described was considered a localized disease. Since then patients with generalized eruptions have been reported, especially by the English dermatologists. For my own part, I do

not believe that lichen nitidus has anything to do with tuberculosis, but I think that more studies on vitamin A should be made.

DR. MAURICE OPPENHEIM (by invitation): The disease is not tuberculosis. I believe that it belongs to some nevoid type of lichen.

DR. STEPHEN ROTHMAN: This case illustrates beautifully the fact that histologically a tuberculous structure does not necessarily mean tuberculosis. The negative reaction to tuberculin in this child can be taken as definite proof that he has no tuberculosis. I wonder if lichen nitidus in general has anything to do with tuberculosis.

A Case for Diagnosis (Neural Leprosy?). Presented by DR. CLEVELAND J. WHITE and (by invitation) DR. D. E. MEIER and DR. S. E. RAVITZ.

A single, deaf-mute woman, aged 35, was born in Alabama and lived in Alabama and Mississippi until 1940, when she came to Chicago. Her father died at the age of 59 of cerebral hemorrhage. Her mother is living and well. The patient had the ordinary diseases of childhood and meningitis at the age of 4, resulting in deafness. The menstrual history is noncontributory.

The present complaint began when the patient was 12 years old, when she noticed a small itching spot about the size of a quarter on the right thigh. The spot slowly enlarged, and new ones began to appear on other parts of the body below the waist line. The lesions vary in size. There are raised annular and superficial atrophic areas of anesthesia with hyperpigmented borders and hyperesthesia beyond the border, especially on the lower extremities. However, for the past few days the anesthesia has not been present to any extent.

Other features are an edematous right knee, hypersensitivity of the dorsa of both feet, diminished patellar reflexes, a bilateral Babinski sign, some varicosity of both lower limbs, but no edema, and palpable inguinal lymph nodes, which are not painful.

The Kahn reaction was negative. The nasal smear yielded no organisms. On examination no fungi were found.

The histologic examination of a section removed showed a diffuse inflammatory infiltrate but nothing typical.

DISCUSSION

DR. MICHAEL H. EBERT: I made only a cursory examination, and at the time I was not aware of the long duration of the disease. That changes somewhat my ideas about the case. I did test these partly pigmented areas. The woman is a deaf-mute, but she responds to pain by flexing the muscles. The lesions on the leg and the thigh I thought were pretty definite. There seems to be anesthesia in the border. She did appear to have some atrophy of the interosseous muscles of the left hand. I was unable to palpate an enlarged ulnar nerve on either side. I think that the possibility of leprosy is still present. I doubt that one can accept entirely the statement of the patient's relatives that this disease is of so long a duration. I think that further investigation might include a sternal puncture. Dr. Otsuki and I had rather striking results in a case of maculopapular leprosy presented to this society by finding organisms in the material obtained by sternal puncture. I think that another biopsy specimen should be taken from the margin of these lesions and a careful study made for Hansen's bacillus. I do not think that one can make an absolute diagnosis.

DR. EDWARD A. OLIVER: There has been a fair number of cases of this disease at one time or another in the Cook County Hospital. It requires much searching to find the organism in some cases. I believe that repeated search should be made for the organism. I also felt a nodule in the lobe of the ear. I believe that it would be wise to excise that nodule and submit it for histologic examination, because often the organisms are found on microscopic examination of the tissue.

DR. CLEVELAND J. WHITE: When we first saw the patient, there was definite anesthesia. Atrophy and hyperesthesia were also present. When the smear yielded no organisms, I was not sure of the diagnosis. Dr. Ebert's suggestion of a sternal puncture will be followed. We will excise the nodule in the lobe of the ear, as suggested by Dr. Oliver.

Pellagra. Presented by DR. THEODORE CORNBLEET, DR. D. COHEN (by invitation) and DR. M. S. KAGEN.

Z. P., a Negro woman aged 34, has had diarrhea with abdominal cramps intermittently since 1939. She now has a liquid stool and has lost about 30 pounds (13 Kg.) in weight. A rectal examination revealed a stricture at 3 cm. During the past two months a discoloration on the dorsa of the hands and the feet has appeared.

The blood cell count revealed a hemoglobin content of 16 per cent; erythrocytes, 920,000, and a differential count of 65 per cent neutrophils, 25 per cent lymphocytes and 10 per cent monocytes. The urine was normal, and the Frei test elicited a negative reaction.

DISCUSSION

DR. THEODORE CORNBLEET: I believe that this dermatitis is not occasioned by lack of proper food but by what happens to the food after it is ingested. She has had vomiting and diarrhea for a relatively long time, and that probably is the basis of her trouble. A gastrointestinal disturbance would seem to explain the patient's symptoms.

A Case for Diagnosis. Presented by DR. D. OMENS, DR. H. OMENS and DR. M. S. KAGEN.

R. S., a single Negro woman aged 42, noticed a redness on her legs and thighs three months ago. One month ago, she took Lydia M. Pinkham's tonic, after which a generalized eruption appeared on the body and the upper extremities.

The urine was normal. The blood cell count showed a hemoglobin content of 47 per cent; erythrocytes, 2,930,000, and leukocytes, 7,900. The Kahn reaction of the blood was negative.

A microscopic study of a section taken from one of the lesions revealed an irregular parakeratosis with no stratum granulosum, a clubbing of the papillary bodies, with thinning of the suprapapillary plates, and, in the corium, a mild perivascular infiltrate composed of lymphocytes.

DISCUSSION

DR. CLARK W. FINNERUD: The section was a beautiful picture of psoriasis histologically. After seeing the section I feel justified in considering the eruption as possibly or probably psoriasis.

DR. STEPHEN ROTHMAN: The patient had definite granular lesions.

DR. DAVID V. OMENS: I admit that the section showed typical psoriasis, but the clinical picture suggested that there was something else superimposed on the psoriatic lesion. That is why we presented her.

A Case for Diagnosis (Dermatomyositis?). Presented by DR. THEODORE CORNBLEET, DR. HERBERT RATTNER and DR. M. S. KAGEN.

M. N., a married white woman aged 51, had a redness on the dorsa of the hands and on the ears and face three months ago. Within a few weeks pains and weakness appeared in the arms and the legs. Swelling of the eyelids and feet has been present for the past two months.

The patient showed improvement while she was receiving penicillin intramuscularly. The edema of the eyelids decreased 50 per cent during the past week, while she was receiving 1,000,000 units of penicillin.

The Kahn reaction of the blood was negative. The blood cell count revealed a hemoglobin content of 90 per cent and 6,150 leukocytes, with a differential count of 50 per cent neutrophils, 33 per cent lymphocytes, 10 per cent monocytes, 1 per cent basophils and 6 per cent eosinophils. A roentgenogram showed that the chest was normal. The proctoscopic examination revealed the presence of hemorrhoids. The chemical examination of the blood showed 31 mg. of nonprotein nitrogen per hundred cubic centimeters of blood. The sedimentation rate was found to be somewhat increased—18 mm. in seventy minutes. The urine was entirely normal. A twenty-four hour urinary creatine determination has not yet been satisfactory.

DISCUSSION

DR. DAVID V. OMENS: The histologic picture of the section from the muscle does not show anything definite. The reason is that the section was taken from the distal portion of the extremity instead of the proximal portion. Perhaps if the biopsy specimen were taken from the proximal group of muscles one would get a more definite histologic picture.

DR. THEODORE CORNBLEET: It was intended that the biopsy specimen be taken from the pectoral muscle, but through error it was taken from the gastrocnemius muscle. The sedimentation rate, according to the laboratory report, was definitely speeded up. In the differential diagnosis between lupus erythematosus disseminatus and dermatomyositis, the findings speak in favor of dermatomyositis. We had ordered a creatinine estimation made, but the result is not available.

Tuberculosis Cutis Orificialis with Underlying Pulmonary Tuberculosis.
Presented by DR. D. V. OMENS, DR. H. OMENS and DR. M. OTSUKA.

R. J., a white man aged 41, noticed extreme weakness, anorexia and an intermittent cough for the past six months. About four months ago he noticed on the lower lip a crusted lesion, which has steadily increased in size and is now ulcerated. He stated that the lesion is not extremely painful. He also had diarrhea for two weeks before admission to the hospital. The patient has been a chronic drinker.

The essential physical findings are a slightly infiltrated, nickel-sized, crusted, superficial ulcer on the medial portion of the left side of the lower lip, extending to the vermilion border and down over to the mucous membrane of the inner side of the lower lip. Both submaxillary glands are moderately enlarged and somewhat painful. There are crepitant rales in both apexes of the chest.

The sputum yielded tubercle bacilli. The blood cell count revealed a hemoglobin content of 86 per cent, 5,620,000 erythrocytes and 7,150 leukocytes, with a differential count which was within normal range. The Wassermann and Kahn reactions of the blood were negative. The urine contained albumin 1 plus. A roentgenogram of the chest revealed bilateral active pulmonary tuberculosis.

DISCUSSION

DR. H. E. MICHELSON, Minneapolis: I think that tuberculosis occurring on the mucous membrane of the mouth is comparatively rare. I used to think it a terminal sign, but experts tell me that they see ulceration in the mouth rather often in patients who become reasonably well and they even see cures of the ulcer. It is important to ascertain definitely the state of the pulmonary lesion before making a prognosis.

DR. STEPHEN ROTHMAN: I should like to suggest that a smear of material be taken from the ulcer. In this kind of lesion one usually finds masses of tubercle bacilli.

DR. DAVID V. OMENS: I saw this patient two weeks ago for the first time. At that time he presented a superficial ulcer on the lower lip below the vermilion border, with an extension of the lesion on the vermilion border. When I saw it today for the second time I was surprised to see such a rapid progress in so short a time. I should not be surprised if this is a malignant type of tuberculosis with a rapidly fatal termination.

Kerions. Presented by DR. H. E. MICHELSON, Minneapolis, and DR. CARL W. LAYMON, Minneapolis.

The patients we see who have kerions are almost always farmers or their children. Trichophyton gypseum has been the causative fungus in our cases. One patient has been treated with 20 per cent salicylic acid in petrolatum. One patient with superficial ringworm of the neck also had kerion of the scalp. We have not used epilating doses of roentgen rays in treating kerion. A histopathologic section taken from a third patient revealed epithelioma, so diagnosed by a general pathologist.

DISCUSSION

DR. H. E. MICHELSON, Minneapolis: I want to say a word about the sections that were presented. Dr. Winer asked a hospital pathologist to make a diagnosis, and he promptly diagnosed epithelioma. One should call attention to the fact that kerionic inflammation causes epithelial hyperplasia.

SAN FRANCISCO DERMATOLOGICAL SOCIETY

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April 20, 1945

Relapse Following Penicillin Therapy of Early Syphilis. Presented by DR. WILLARD M. MEININGER.

G. M., a 20 year old single Negro, had positive results of dark field examination, a positive serologic reaction and a genital primary syphilitic lesion in November 1944. His cerebrospinal fluid was normal. He entered Stanford University Hospital on November 15, and his chancre promptly healed with the administration of 1,200,000 units of penicillin given intramuscularly in doses of 80,000 units at six hour intervals. The prepenicillin Kolmer quantitative titer of the blood was 8 units, and the titer remained at that level through Jan. 5, 1945.

He returned for a routine check-up on January 23, with a monorecurrence in which Treponema pallidum was demonstrated. His serologic titer had risen to 32 units. The cerebrospinal fluid was still normal. He then received 40,000 units of penicillin intramuscularly every three hours for sixty doses, totaling 2,400,000 units.

The chancre healed, but on February 16 there were three small round erosions in the coronal sulcus. Repeated dark field examinations failed to reveal spirochetes. The erosions appeared herpetic and healed with local application of zinc peroxide medicinal. The serologic titer rose to 64 units but by March 21 had again fallen to 16 units.

The site of the chancre again became ulcerative, and spirochetes were observed on dark field examination on April 6. He was given 0.06 Gm. of oxophenarsine hydrochloride, and the lesion healed four days later, but some induration persists.

DISCUSSION

DR. REES B. REES: I should like to ask Dr. Meininger what is his plan for treatment.

DR. WILLARD M. MEININGER: Routine therapy consists of a total of thirty weekly injections of oxyphenarsine hydrochloride plus sixty injections of a bismuth preparation, and this system will be followed, provided he does well. This evening there is much induration in the lesion, and I am not sure that this will prove to be the answer. More intensive therapy may be necessary.

DR. JOHN M. GRAVES: I should like to ask about the dosage of penicillin and whether you would still continue with it.

DR. WILLARD M. MEININGER: Yes, penicillin is still being used. At present a course of 2,400,000 units is administered over a period of seven and a half days. It is given intramuscularly at three hour intervals.

DR. MERLIN T. R. MAYNARD, San Jose, Calif.: In one of the recent issues of *The Journal of the American Medical Association* the use of penicillin along with oxophenarsine hydrochloride has been discussed. Through the use of the two drugs together, the dose of penicillin could be reduced to approximately one-half and the same percentage of results obtained.

I consider that this man has been inadequately treated with penicillin or inadequately treated with oxophenarsine hydrochloride because of the presence of a recurrent lesion. I think that, instead, he should have received routine antisyphilitic therapy with oxophenarsine hydrochloride and an intensive course of penicillin and should not have had the dose of penicillin cut in half. A case of this sort should be handled with persistence. Once penicillin has been given and failed, the case should not be put in discard, but treatment should be given again to see whether a combination of penicillin and oxophenarsine hydrochloride would effect a cure. On the other hand, treatment with penicillin should be followed by routine antisyphilitic therapy until the patients have negative reactions to the tests; otherwise there will be some recurrences.

DR. ERVIN EPSTEIN: I should like to mention the case of a man who had a relapse of secondary syphilis after two years of treatment with oxophenarsine hydrochloride and a bismuth preparation. A course of 2,400,000 units of penicillin was given, followed by a second course of 4,000,000 units, or a total of 6,400,000 units, without any effect on the eruption.

DR. JOHN M. GRAVES: I do not know whether this case is a good one in which to continue treatment with penicillin, as far as learning anything is concerned. Even if one would combine treatments and treat successfully, one would not learn much. A fresh case in which there had been no previous treatment would teach more about various combinations and their relationships. I understand that at the present time the method used is as follows: The patient is treated for ten days, during which time he receives 300 mg. of oxophenarsine hydrochloride and 1,200,000 units of penicillin and three injections of bismuth subsalicylate. To the group of patients who were mentioned recently in *The Journal of the American Medical Association,* a combination of penicillin and oxophenarsine hydrochloride was given, and it was merely stated that results were better in that group. However, nothing was said about the time of observation.

DR. NORMAN N. EPSTEIN: This patient has become resistant to penicillin. It does not follow, however, that he will become resistant to arsenic when given routine antisyphilitic treatment. Because he has relapsed, I think that the course of treatment to be followed should be more intensive than that which Dr. Meininger had proposed. Injections of oxophenarsine hydrochloride should be given twice a week for ten weeks for a course of twenty injections, and during a certain portion of the time there should be overlapping with injections of a bismuth preparation. I should like to recommend that such courses of oxophenarsine hydrochloride be alternated with courses of a bismuth preparation for a period of one year or more. The courses of bismuth therapy should not exceed six weeks and should overlap the last four injections of the arsenical.

DR. GEORGE V. KULCHAR: Two million units of penicillin is an adequate dose; the tendency is to increase the dose to 3,000,000 units. I think that there are going to be even more relapses as time goes on. Perhaps the dose should be increased to 4,000,000 units. At the present time the treatment being given is 600,000 units of penicillin and five injections of oxophenarsine hydrochloride and five injections of bismuth subsalicylate given over an eight day period.

Chronic Coccogenous Sycosis Treated Locally with Penicillin. Presented by DR. HARRY E. ALDERSON.

S. A., a white man aged 31, a sheet metal worker, has sycosis limited to the upper lip and the chin. It is contained within well defined borders and presents

an underlying chronic eczematoid eruption. Its duration is over a year. He had been given every kind of treatment (internal and external) mentioned in textbooks, including sulfonamide compounds, and had been the rounds of dermatologists here. In his work he is exposed to various irritating substances, and for protection he wears a gauze mask, which seems to serve as an incubator favoring the growth of organisms. Also, he has had psoriasis, which may account for the type of reaction that his skin presents. His general health and habits are good. His diet is adequate, and he takes good care of himself, although he works extremely hard.

Over a period of several months he received ultraviolet ray treatments, compresses of solution of aluminum acetate, boric acid compresses, local applications of microform crystals of sulfathiazole, cleansing with sulfonated oil and applications of various salves and pastes. Also, the patient remained away from his work for some days. His condition improved at times and grew worse at others. No treatment had any more than temporary effect; so, finally, on the suggestion of Dr. Paul Fasal, who saw the patient for me a few times, it was decided to try penicillin locally. Continuous compresses of a solution containing 250 units to the cubic centimeter were applied for a week. Within two days a remarkable improvement occurred. All the follicular pustules and crusting disappeared completely. About two weeks later small local recurrences appeared on each side of the chin in well circumscribed areas. The continuous use of compresses of penicillin was resumed, with prompt relief in two days. One week later there was a slight recurrence in the two small areas on the chin. Application of penicillin salve was started yesterday (250 units to 1 cc.).

DISCUSSION

DR. HARRY E. ALDERSON: Most of the members have seen this patient. I think that I tried about everything that was ever suggested for this disease. The improvement after the continuous application of compresses with penicillin for one week was almost dramatic—all pustules disappeared. There was a slight relapse at two points on the chin, but they were overcome by penicillin compresses. One week later there was a slight recurrence on one side; I started using penicillin ointment, and tonight everything looked fine. When I first saw him he had a confluent pustular eruption involving the entire upper lip and the chin.

DR. GEORGE V. KULCHAR: I think that penicillin ointment should be used instead of compresses.

DR. ERVIN EPSTEIN: I have treated 10 or 12 patients with injections of penicillin, and 75 per cent of them showed decided improvement. In every case, however, there was a relapse as soon as the therapy was discontinued.

Hodgkin's Disease Complicated by a Squamous Cell Epithelioma of the Neck. Presented by DR. FRANCES A. TORREY.

W. B. H., a white man, was treated in the Dermatologic Clinic of the University of California from May until September 1935 for a seborrheic dermatitis involving the scalp, the face and the body. At that time the eruption was said to have been present for twelve years and to have had a variety of treatments by a number of dermatologists.

On March 13, 1945, he was referred to the Visible Tumor Clinic of the University of California by Dr. Oaks, whom he had consulted on March 5, because of an ulceration on the back of his neck. The lesion had been present about four months and was 2.5 cm. in diameter. Dr. Oaks excised the ulcer and a wide margin of skin and removed the underlying cervical nodes. The histopathologic structure of the ulcer was that of a squamous cell epithelioma.

There was no evidence of metastases of the epithelioma into the cervical nodes. However, the nodes examined were diagnosed as Hodgkin's disease. At this time there was generalized adenopathy, with large firm glands palpable in both axillas. A biopsy of one of those confirmed the diagnosis of Hodgkin's disease.

A biopsy specimen taken on April 4 from one of the chronic cutaneous lesions on the back showed only chronic inflammation.

There is also a massive formation of verrucae accuminatae over the entire genitalia and in the anal area. Verrucae are also present on the dorsa of the hands and arms.

An examination of the blood on April 12, 1945, showed: hemoglobin, 88 per cent; erythrocytes, 4,400,000; leukocytes, 22,250, with 60 per cent filamented cells, 29 per cent nonfilamented cells, 4 per cent eosinophils, 2 per cent small lymphocytes and 5 per cent monocytes. The Kahn reaction of the blood was negative.

DISCUSSION

DR. GEORGE V. KULCHAR: I think that these lesions on the chin are seborrheic dermatitis. The lesions on the trunk look more like parapsoriasis, more like primitive lesions of mycosis fungoides. There is definite infiltration. Since there is no doubt about Hodgkin's disease of the lymph nodes, it may be a combination of mycosis fungoides and Hodgkin's disease, a transitional form. I should like to know what the primary lesions looked like before they were treated at the University of California.

DR. FRANCES A. TORREY: This patient was seen first in 1934 and at intervals for a year, and then he disappeared. When he came back in April 1945, the plaques on his back were suggestive of mycosis fungoides. A biopsy specimen was taken from a typical lesion on his back. The histopathologic examination showed only chronic inflammation. A previous biopsy specimen taken from an axillary node was definitely characteristic of the lymphoblastoma group. His white blood cell count showed from 22,000 to 29,000 leukocytes.

DR. HARRY E. ALDERSON: In addition, I think that he has condyloma accuminata. I wonder whether any one has had any experience with resin of podophyllum, as has been mentioned recently in the literature. I tried it once in a 25 per cent suspension in liquid petrolatum, and a violent reaction resulted which necessitated almost daily calls on the suffering patient. When healing finally resulted, there were no more condylomas.

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DR. HARRY E. ALDERSON: This man rubbed the preparation in vigorously, contrary to instructions, covering the entire perianal area.

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Idiopathic Multiple Pigmented Sarcoma of Kaposi. Presented by DR. HIRAM E. MILLER and DR. REES B. REES.

P. L., an 84 year old Jewish man, was first seen on Feb. 27, 1945, with regard to the multiple light reddish brown plaques, from the size of a pea to that of a lima bean, on his soles and insteps, which he had first noticed ten days previously. A biopsy specimen was taken from his left instep. The histopathologic picture included a dilatation of the capillaries, collections of lymphocytoid cells and deposits of hemosiderin pigment in the corium. Unfiltered roentgen rays (250 r) were given to each instep, on March 2 and March 27, 1945. The histologic section is presented.

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DISCUSSION

DR. NORMAN N. EPSTEIN: I think that this is a characteristic case.

DR. MERLIN T. R. MAYNARD, San Jose, Calif.: The patient also has leukoplakia of the tongue.

DR. REES B. REES: I might say that the lesions are fading in color and are less papular since the patient was first seen, which is no doubt due to roentgen ray therapy.

Lichenoid Dermatitis (New Guinea Type). Presented by DR. HARRY E. ALDERSON and (by invitation) DR. KEMP H. DOWDY.

For some time in the Dermatological Service of the United States Marine Hospital, San Francisco, there has been an ever increasing number of cases of lichenoid dermatitis, the patients being predominately merchant seamen and Coast Guard personnel returning from duty in the South Pacific Area. The following 2 cases are typical.

CASE 1.—F. S., a 50 year old white merchant seaman, reported to the United States Marine Hospital, San Francisco, on April 5, 1945, complaining of severe itching of the arms and the legs.

He had been well all his life, and the past thirty-three years he had spent at sea, during which time he had been in practically all the major ports of the world and had no history of cutaneous infection prior to this episode.

On Jan. 29, 1945, while in port on the north coast of Australia, he began to have swelling, itching and pain in the region of the right ankle. The following day he noticed a pustular eruption of the right ankle and leg. On January 31, he was taken to a nearby United States Army hospital and given care. He returned to the ship the same day, after which time local warm moist applications were applied. The cutaneous infection improved.

On February 10, he began to notice generalized itching of the trunk, the extremities, the face and the neck. Within a few days he noticed peculiar flat-topped lesions over the whole body. On February 25, approximately fifteen days later, he was hospitalized at an Army base hospital in Hollandia, New Guinea, where he remained until March 31, during which time the following diagnoses were made by Army dermatologists: (1) acute exfoliative dermatitis of the arms and the legs, cause undetermined, and (2) severe atypical lichen planus of the forehead, eyelids, mouth, trunk and extremities.

Various local applications were made, with gradual improvement. Thereafter he was released to his ship, and on April 2 he was taken ashore to an Army evacuation hospital in Leyte. On April 4, he was discharged and evacuated to San Francisco by air.

He has had the usual childhood diseases but no severe illnesses in adult life. He was hospitalized in San Francisco in 1932, 1935, 1936 and 1939 for various minor illnesses. On each admission the serologic reactions of the blood for syphilis were positive. After his initial admission in 1932, he received eight injections into the arm and ten into the hip, after a diagnosis of latent syphilis had been made. On each admission he was advised to have further treatment, but he did not do so.

Scattered over the trunk, face, neck and extremities were many elevated, flat-topped lesions, 2 to 4 mm. in diameter, with a livid purple color and with intermingling areas of depigmentation. A few superficial pustular lesions were noted on the lower extremities. There was generalized lichenification of the forearms and legs, which appeared secondary to scratching. The tongue was characterized by gray plaquelike papules, which were well defined. Similar lesions were noted on the buccal mucosa. The oral lesions were typical of lichen planus.

The arms, both the flexor and the extensor surfaces, showed many circular, elevated, flat-topped papules, 2 to 4 mm. in diameter, pigmented and having a tendency to coalesce. There was no evidence of exfoliation. Similar lesions were noted on the lower extremities.

The general physical examination revealed essentially normal conditions, except for the cutaneous involvement.

Laboratory findings were as follows: On admission the examination of the urine showed no albumin, sugar, casts or red blood cells. The hemoglobin content was 13.7 Gm. There were 4,500,000 erythrocytes and 15,800 leukocytes, with a differential count of 74 per cent neutrophils, 22 per cent lymphocytes and 4 per cent eosinophils. The Wassermann reaction of the blood was negative and the Kahn reaction doubtful.

Treatment has consisted of daily applications of White's crude coal tar, ultraviolet irradiation, bismuth sodium tartrate twice a week and a high carbohydrate, high protein and high vitamin diet.

Approximately 40 per cent improvement has been noted since the patient's admission on April 5, 1945. The pruritus has ceased.

Microscopically, the specimens submitted consisted of two small elliptic sections of skin, the larger measuring 6 mm. in length and up to 2 mm. in thickness. There was moderate hyperkeratosis as well as an increase in the stratum granulosum of the epidermis. The rete pegs were focally atrophic and had a "saw tooth" appearance. The basal layer showed slight to moderate degeneration and atrophy. The superficial corium and papillae showed slight focal lymphocytic infiltration. There were a few scattered macrophages filled with coarsely granular, golden brown to brown pigment. The findings were consistent with a diagnosis of lichen planus.

Case 2.—J. T., a 53 year old merchant seaman, reported to the United States Marine Hospital, San Francisco, on Feb. 1, 1945, complaining of severe generalized itching and painful lesions in the mouth. He was admitted to the Dermatological Service and gave the following history.

About Nov. 12, 1944, while aboard ship, on the way to Brisbane, Australia, he noted "cold sores" on the lower lip, which spread to the corners of the mouth and over the tongue and the buccal mucosa. Within a few days itching of the extremities developed, and many small circular raised erythematous areas gradually extended over the face, neck, scalp, trunk and glans penis. The symptoms steadily increased, and the patient was admitted to the United States Army General Hospital, Hollandia, on December 19. A physical examination was made on admission, and the following findings were abstracted from the clinical record.

The entire integument was involved. On the forearms and legs the skin was thickened, dry, red and scaling. On the trunk there were large areas of scaling. The lower lip was slightly denuded and purplish, and on the buccal mucosa there were whitish papules and on the tongue areas where the papillae were gone. There was soft edema of the ankles and of the dorsa of the feet. The patient was thought to have lichen planus.

The treatment consisted of moist compresses of penicillin and supportive treatment. He remained in the hospital at Hollandia until Jan. 11, 1945, at which time he was dismissed and reported to the Marine Hospital February 1.

On admission he was better, but severe pruritus was present. He gave a past history of malaria in 1916 and yellow fever in 1909. He said that he had never had syphilis.

A physical examination in the Marine Hospital revealed the following picture: There was a generalized eruption of flat-topped, annular papules, 2 to 4 mm. in diameter, violaceous with fine, white, loosely attached scales, removal of which produced no bleeding. There was decided thickening of the skin of the extremities. The nails of the fingers and the toes showed pitting in the distal portion.

An examination of the blood showed: hemoglobin, 14.8 Gm.; erythrocytes, 5,200,000 and leukocytes, 9,500, with a differential count of 76 per cent neutrophils,

31 per cent lymphocytes and 2 per cent eosinophils. The urine was essentially normal. The Kahn and Wassermann reactions of the blood were negative. A microscopic examination of scales from various areas showed no fungus.

The treatment in the Marine Hospital has been supportive, with a high vitamin, high protein and high carbohydrate diet, crude coal tar and ultraviolet irradiation and bismuth sodium tartrate twice weekly. The patient has shown gradual improvement. At present there are no active lesions, and the pigmentation is slowly subsiding. The pruritus has ceased.

DISCUSSION

DR. GEORGE V. KULCHAR: I should not think that this is confined to the New Guinea Area only, as last January I saw 2 patients with this disease who returned from the Italian front.

DR. HARRY E. ALDERSON: There has been a number of such cases in the Marine Hospital, and in some of them the disease was at an earlier stage than that of the case presented to this society tonight. All the patients have typical lichen planus lesions, including involvement of the buccal mucosa. They respond readily to the usual therapy and improve more rapidly in the cooler climate. Many of the lesions are secondarily infected by scratching. One peculiarity is that the face is often much involved. As the lesions subside they leave deeply pigmented macules.

Syphilitic Keratosis. Presented by DR. WILLARD M. MEININGER.

W. E., a white man aged 50, was first seen on March 14, 1945, with the complaint of inability to work as a presser because of "crusts" on his feet. The rash began on his hands about two years ago, and during the past year it appeared on the arms, legs and feet. Two months of treatment for psoriasis failed to improve it.

He last had gonorrhea in 1926 and has no urethritis or arthralgia. No history of primary or secondary syphilis was obtained. A perianal fistula has been present since 1932, and he was first aware of "lumps" in the perianal region in 1938.

The lesions on the extremities are psoriasiform. There are pitting of the nails and onychauxis of the thumbs and the toes. Hyperkeratoses are present on the palms and soles, with a verrucous element on the sides of the feet. Smooth lobulated tumors are clustered about the anus. There is considerable induration of a large portion of the buttocks. Pus may be expressed from several sinuses, and some areas are verrucous. The pupils are unequal; deep reflexes are hyperactive, and the patient is somewhat euphoric.

The Wassermann reaction was strongly positive. The spinal fluid has not been examined. The heart and the aorta were normal on fluoroscopic examination. No malignant growth was demonstrated in a biopsy specimen taken from the buttock.

Four injections of iodobismitol with benzocaine have resulted in definite improvement.

DISCUSSION

DR. GEORGE V. KULCHAR: I should like to know about the perianal nodes. I suppose that granuloma inguinale can be considered.

DR. NORMAN N. EPSTEIN: I thought that he had evidence of psoriasis, although the lesions around the rectum suggested syphilis. Elephantiasis about the anus is suggested as a possibility, or granuloma inguinale. I think that a careful examination of the rectal canal should be made in order to find out whether there is a connection between the mass on the skin and the mucous membrane. Further studies should be made, such as a biopsy, a search for leishmania bodies and a Frei test.

DR. OTTO E. L. SCHMIDT: I saw this patient with Dr. Meininger before treatment, and there is no question but that he has improved since I last saw him. I understand that he had only antisyphilitic treatment. I have never seen anything like that before. Older books and pictures describe exactly the same thing that

this man has on his feet. With regard to granuloma inguinale, this should not be seriously considered. The patient is a white man, which would make it a remote possibility. Furthermore, the fact that the lesions on his feet and buttocks have been disappearing indicates that the patient's condition may be due only to syphilis.

DR. GEORGE V. KULCHAR: The lesions on his elbows have been present for two years and are typical of psoriasis. As for granuloma inguinale, his being a white man does not speak against it, since it does occur in white men.

DR. NORMAN N. EPSTEIN: Has a proctoscopic examination been made?

DR. WILLARD MEININGER: No.

DR. C. W. MCNITT (by invitation): Was there any evidence of stricture?

DR. WILLARD MEININGER: The anus admits the finger tip, and the anal sphincter feels like a fibrous ring. I am not at all sure that one diagnosis explains the entire picture. It seems apparent that syphilis has something to do with the condition of the patient, as he has improved a great deal these past three weeks with bismuth therapy. This story of the fistula's being present for a period of twelve years, together with the fact that he has deep abscess formation about the rectum with sinuses from which pus can still be expressed, indicates that there is some pyogenic infection as well. Elephantiasis has been described in association with syphilitic keratosis. There have been only a few recorded cases of this condition, none as extensive as this.

A Case for Diagnosis (Monocytic Leukemia?). Presented by DR. NORMAN N. EPSTEIN.

R. B., a white married man aged 48, first began to suffer from a generalized eruption about eight months ago. This has progressed, and pruritus has been intense up to the present time. An examination revealed a generalized eruption involving the entire skin. The skin is diffusely reddened and thickened without exudation. There is generalized adenopathy of moderate degree, but the inguinal and femoral nodes are large and soft. These nodes form a mass the size of a large lemon. The oral mucous membranes are not affected.

A general physical examination revealed no abnormalities except a barely palpable spleen. The laboratory examinations (a roentgenogram of the gastrointestinal tract, a urinalysis and a Wassermann test of the blood) gave essentially normal results. The blood count showed: hemoglobin, 80 per cent; red blood cells, 3,980,000, and white blood cells, 90,000, with a differential count of 5 per cent polymorphonuclear neutrophils, 9 per cent lymphocytes, 74 per cent mononuclears, 1 per cent eosinophils, 1 per cent myelocytes and 10 per cent monoblasts.

A histopathologic examination showed the epidermis to be essentially normal. Between the rete pegs and extending into the corium were small masses of cells which appeared to be of the mononuclear type. Giemsa's stain confirmed this; many were histiocytes. They were larger than lymphocytes.

DISCUSSION

DR. GEORGE V. KULCHAR: I should like to ask about the original picture and what the skin looked like. Has there been any change at all?

DR. NORMAN N. EPSTEIN: The eruption has not changed for several months.

DR. ERVIN EPSTEIN: I think that the clinical picture is a little unusual for monocytic leukemia. The characteristic lesions are papules, plaques and ulcers. Some feel that monocytic leukemia is a form of myelogenous leukemia. Even if this is considered as myelogenous leukemia, the lesions are unusual.

DR. JOHN M. GRAVES: I have seen only 1 case of monocytic leukemia with cutaneous lesions. The man has ulcers on the lower parts of his legs.

DR. ERVIN EPSTEIN: I have seen ulcerations in 2 cases of monocytic leukemia. The ulcers were large, almost gangrenous in type. The eruption in this patient is not an exfoliative erythroderma, but it tends more toward this form than

toward the other types of lesions that I have mentioned. It is an unusual lesion for either myelogenous leukemia or monocytic leukemia.

DR. REES B. REES: I think that the nodule in his right breast is of interest.

DR. NORMAN EPSTEIN: Of course, the problem in this case is whether the cutaneous lesions are specific, whether the eruption is leukemic infiltration in the skin or whether it is nonspecific, as seen in other leukemias and other types of lymphoblastoma. I thought that the slide indicated probably monocytic infiltration in the skin, although the amount of infiltration was not great. Most of the cells were mononuclear. Further studies should be made by hematologists. I think that the ulcerations on the patient's legs are compatible with monocytic leukemia. The rest may be or may not be nonspecific generalized dermatitis. Probably, the nodes in the groins are part of this leukemia, in spite of the fact that the rest of the nodes are not very large.

This case was referred to Dr. Ernest Falconer, who reported the following observations: After a study of the peripheral blood and bone marrow, it was thought that the disease is not monocytic leukemia but typical of lymphatic leukemia.

Unilateral Ulceration of the Mouth (Tuberculosis Orificialis?), Probably with Miliary and Ileocecal Involvement. Presented by DR. OTTO E. L. SCHMIDT.

A. B., a white housewife aged 28, entered the medical ward of Stanford University Hospital April 16, 1945, complaining of abdominal cramps, nausea, vomiting and backache for one year and painful ulceration of the left side of the mouth for three months. The onset of the abdominal symptoms was coincident with pregnancy and continued after the delivery of a normal baby three and a half months ago. There have been intermittent fever and a loss of 14 pounds (6.4 Kg.) in weight since January 1945. A painful bleeding eruption of the palate and gums on the left side and the left cheek began in the upper anterior part of the gingival sulcus shortly after parturition and has spread progressively since.

There is a friable granular-nodular confluent ulceration covered with a thin grayish exudate involving the gingivae, buccal mucous membrane, hard and soft palate and faucial pillars only to the left of the midline. Cervical and submaxillary nodes are palpable. There are a mass (kidney?) in the right upper quadrant of the abdomen and an egg-sized mass in the right lower quadrant. A small grayish nodule is seen in the left sclera.

The laboratory examination of the blood showed: hemoglobin, 55 per cent; erythrocyte sedimentation rate, 34 mm. in one hour; plasma protein, 6.8 Gm. per hundred cubic centimeters. Examinations of the urine and the stool were noncontributory. Tuberculin in a 1:1,000 dilution elicited a negative reaction. The acid-fast stains of material from the mouth, the bladder and the cervix revealed no tubercle bacilli. The roentgenograms of the chest showed diffuse nodular infiltration. The barium sulfate enema showed a deformed ileum and cecum. The coccidioidin test revealed no organisms after twenty-four hours.

DISCUSSION

DR. HARRY E. ALDERSON: This seems to me a good example of local inoculation of the mucous membrane with the patient's own sputum.

DR. JOHN M. GRAVES: Does the patient have pulmonary or laryngeal tuberculosis?

DR. OTTO E. L. SCHMIDT: She has diffuse miliary infiltration throughout both pulmonary fields. The test for acid-fast bacilli has not yet been made, since the patient has been in the hospital for only three days. A tuberculin test elicited a negative reaction. Of course, in miliary tuberculosis there may be a negative reaction to tuberculin.

DR. JOHN M. GRAVES: What sort of lesion would be expected in a case of inoculation tuberculosis in which there had been a negative reaction to the tuberculin test? Would anything like a primary tuberculous complex be obtained?

DR. OTTO E. L. SCHMIDT: I cannot answer that, to be absolutely sure. First, the patient has a unilateral distribution, the eruption involving so much of one side only. No sputum was brought up, but she might have vomited tubercle bacilli. It is not the sort of disorder seen ordinarily. Patients whose sputum contains organisms are apt to inoculate the mucous junction.

DR. JOHN M. GRAVES: I had a patient a good many years ago who had tuberculosis of the hard palate. She had a denture that did not fit well. She had definite pulmonary tuberculosis and coughed up sputum, which brought up bacilli that lodged between the palate and the alveolar ridge. The case resembled this one very much.

DR. OTTO E. L. SCHMIDT: The possibility of involvement of the maxillary division of the fifth nerve by herpes zoster was also brought up. It is hard to prove now, as she has had the eruption for three months—that is, the lesions have progressed in the past three months.

DR. JOHN M. GRAVES: Should not a biopsy be performed?

DR. OTTO E. L. SCHMIDT: This has been proposed. The lesion is certainly typical of tuberculosis of the mucous membrane, and that should be the presumptive diagnosis. The nodules are apparent within the lesions. The patient is obviously gravely ill, which suggests one of the diseases of the tuberculous type, including coccidioidomycosis. The condition should be differentiated from any other disease that might mimic a tuberculous picture. Most likely it is miliary tuberculosis with involvement of the mucous membrane, and one should accept this diagnosis until one can prove it is not.

DR. FRANCES M. KEDDIE: Another possibility occurred to me—that is, histoplasmosis. Pulmonary and oral lesions are not infrequently present at the same time.

DR. NORMAN N. EPSTEIN: Coccidioidomycosis should also be considered.

Roentgen Ray Dermatitis Treated with Radon Oinment. Presented by DR. JOHN L. FANNING.

P. G., a white man aged 27, is the office manager of an electric company.

In January 1943, he examined rocks for over an hour, using a hand fluoroscope and an x-ray machine. The next day he felt a sunburn on the fingers, and in a week severe dermatitis developed on the backs of the fingers and the right hand. which was treated until April, when it was healed.

He was next seen in January 1944, with evidence of roentgen ray dermatitis and beginning ulceration of the right third finger. Later ulcerations appeared on the right second and fourth and the left second and fourth fingers. He was treated with a bland ointment, urea and aloe without results. The severe pain necessitated sedation. In May amputation of the right third finger was considered.

The patient was seen in July by Dr. Templeton, who suggested radon ointment, 100 electrostatic units and later 200 electrostatic units for eight hours weekly. The right finger was healed in September, and all fingers were healed in April 1945.

New ulcerations and keratoses are developing on the right third finger and more dermatitis on the back of the right hand.

DISCUSSION

DR. REES B. REES: If it is at all feasible, plastic reconstruction should be considered and done as soon as possible.

DR. HARRY E. ALDERSON: It would be difficult to reconstruct the dorsa of the hands and fingers. On the other hand, I do not see what else can be done, unless the eruption is controlled with applications of radon.

DR. MERLIN T. R. MAYNARD, San Jose, Calif.: I have said a number of times before that every patient with radiodermatitis should receive vitamin D for a long time to soften the scar. I have seen eruptions like this occurring over and over again. I think that the patients should be receiving this form of therapy as a routine. There is less contraction as well as less sclerosis, and as far as grafting is concerned, the tissues would be in better condition for it. Besides, it keeps an accumulation of calcium from forming in collagenous tissues, which cuts down circulation or devitalizes the areas.

DR. JOHN L. FANNING, Sacramento, Calif.: The patient had so much pain with one of his fingers that at one time I thought it should be amputated. Dr. Templeton saw him and suggested radon ointment. The patient began using it, and the ulcer healed completely, which to me is rather remarkable. In a short time other areas broke down, and with the application of radon ointment healed in from six weeks to three months.

Dermatitis Venenata Due to a Penicillin-Containing Ointment. (Photograph only, patient not presented.) Presented by DR. OTTO E. L. SCHMIDT.

R. K. C., a 40 year old white man, a hotel clerk, first entered the Stanford University dermatologic clinic complaining of crusted ulcers of the scalp of two months' duration and ulcers of the right thumb and the left shin of two weeks' duration. He had used ammoniated mercury ointment, with little effect.

Examination showed a malnourished, pale man. Scattered over the scalp were crusted, purulent ulcers measuring about 2 cm. in diameter. A purulent paronychia involved the right thumb. On the left midtibial surface was a 6 cm. excavated crusted ulcer with peripheral erythema.

The Wassermann reaction was negative, and a culture of material from the ulcer on the shin showed a heavy growth of hemolytic streptococci and Staphylococcus aureus, coagulase positive. Potassium permanganate compresses and bismuth tribromphenate ointment brought about healing of the lesions on the scalp but did not affect those on the thumb and the shin. Penicillin in an ointment (250 units per gram of petrolatum base) was used twice daily, and in ten days the ulcers on the thumb and the leg were two-thirds healed. The preparation was changed to one containing penicillin, 500 units per gram of a Lanette wax base. Ten days after the change, a confluent erythematous papular eruption appeared around the lesions on the right leg, in the exact area covered by the ointment. The plain base has not yet been obtained for patch testing, nor has a solution of penicillin yet been applied.

DISCUSSION

DR. OTTO E. L. SCHMIDT: This is an incomplete presentation, since I do not have the results of the tests with all the ingredients of the ointment base. I think that this case proves that penicillin is not as innocuous as the first reports indicated.

NEW YORK DERMATOLOGICAL SOCIETY

Hans J. Schwartz, M.D., *President*

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April 24, 1945

Erythema Annulare Centrifugum. Presented by DR. FRED WISE.

J. C., a girl aged 2 years and 3 months, has had intermittent eruptions of urticaria papulosa since she was 3 months of age. The baby's general health has been excellent, and the eruptions seem to be uninfluenced by dietetic restrictions. About two months ago a gyrate eruption appeared on the abdomen and

the thighs; the lesions occurred at irregular intervals, lasting a week to ten days, and faded spontaneously at different intervals.

Examination showed widespread, well defined, ringed lesions, varying in diameter from 4 to 8 inches (10 to 20 cm.), on the abdomen, buttocks and thighs. The borders were ¼ inch (0.6 cm.) broad, bright red, and faintly elevated at their outer edges, while the inner edges sloped toward the interior of the circles, which showed no visible changes. The mother stated that the ringed lesions disappeared promptly after the child had a Schick test.

DISCUSSION

DR. V. H. CORNELL (by invitation): I agree with the diagnosis; this is an extensive case.

DR. FRANK C. COMBES: I can confirm the report that these lesions disappear on exposure to ultraviolet radiation from a quartz mercury vapor glow lamp.

Junction Nevus. Presented by DR. ANTHONY C. CIPOLLARO.

H. W., a girl aged 13, consulted me on April 14, 1945, because of a lesion on the forehead, which has been present since birth. There has been no definite sign of growth, and it has never been treated.

The lesion is the size of a marble, situated in the middle of the forehead near the right eyebrow. It is elevated and light brown and is firm to the touch. The major portion of the lesion extends below the surface of the skin.

The case is presented, first, to determine the type of lesion on clinical grounds, and, second, if treatment is indicated, to ascertain what type of treatment should be instituted.

DISCUSSION

DR. FRED WISE: Since there is a hard infiltrated area below the pigmented surface, I should be inclined to regard this as a potentially dangerous lesion. I cannot say whether I should advise removal with wide excision or whether I should leave it alone.

DR. MAURICE J. COSTELLO: I agree with those who think that this lesion should be excised conservatively.

DR. GEORGE C. ANDREWS: In a series of about 200 cases of melanoma it was found that in all cases in which the melanomas had been excised in children under 10 years of age there was 100 per cent cure. This child's age is in favor of this treatment. If the lesion is excised now, her chances are excellent, whereas if melanoma develops later in life her chances will not be so good.

DR. ANTHONY C. CIPOLLARO: I presented this case for the reason brought out in the discussion. The patient's father is a physician, who wanted my advice as to removal of the lesion. I am not sure that I agree with the suggestion that the lesion should be excised not too widely, with a fair margin for diagnostic purposes. If there is any possibility of this being a dangerous lesion, it can be left alone. However, I do not see what harm there is in excising a potentially dangerous lesion. I have seen melanocarcinomas develop in 2 patients several years after the removal of junction nevi.

Granuloma Annulare Generalized. Presented by DR. EUGENE E. TRAUB.

P. W., an 8 year old boy, first noticed eruptions on both legs after an attack of measles in May 1944. New lesions appeared on the trunk and the upper extremities, and the eruption gradually became generalized. The only drugs that the boy was known to have taken were 6 tablets of a sulfonamide compound in February and November 1944 for a respiratory infection which his mother termed "flu," and a cough medicine on the occasion of measles.

Examination showed a generalized eruption of papular and nodular lesions irregularly scattered over the chest, the back (particularly the interscapular region), the buttocks and the upper and lower extremities.

On the extensor, inner and flexor surfaces of both legs, where the eruption originally had started, are firm plaques up to almost half-dollar size, smooth, elevated and movable with the skin against the underlying structures. These plaques are shiny and violaceous. Some of these plaques are bordered by reddish, closely set nodules, forming a ring around the somewhat depressed center.

The papules on the trunk are discrete and coalescent and vary in size from that of a pea to that of a bean. They are skin colored, many of them with a tendency to form rings. On the buttocks there are elevated pink-reddish wheal-like lesions up to a quarter in size.

The lymph nodes were palpable but not appreciably enlarged; the spleen was not felt.

The urine contained no albumin. Examination of the blood showed: red cells, 3,230,000; white cells, 4,850 (borderline leukopenia); hemoglobin, 84 per cent, and color index, 1.0. The differential count showed 25 per cent neutrophils, 3 per cent eosinophils, 3 per cent monocytes and 69 per cent lymphocytes. A roentgenologic examination revealed that the chest was essentially normal. An examination of the thorax showed the total heart area relatively a shade small, yet within 10 per cent of normal in size and contour. There was a slight accentuation in both hilar regions. The pulmonary fields were otherwise clear, with no evidence of parenchymatous infiltration or pleural involvement.

The microscopic diagnosis was Spiegler-Fendt sarcoid (?). Further sections showed suggestions of granuloma annulare.

The section showed a relatively normal epidermis. The entire corium was filled with islands as well as with a diffuse cellular infiltration. The majority of these cells were of fixed connective tissue type. In addition, there were rather large cells with deeply stained nuclei. There were some lymphocytes and plasma cells. The connective tissue fibers around the nodules were not broken. There was no pigment in the methylene blue stain.

The deeper sections showed a normal epidermis with a parakeratotic scale. Scattered throughout the corium were islands of round cell exudate consisting of mixed cells.

There was a diffuse cellular exudate which was especially evident in the lower part of the corium and also affected the hypoderm. In the midcorium there was an island of non-nucleated connective tissue fibers, which had lost their normal contour and had become swollen. In the center of this nodule there were some blue-staining granules and remnants of nuclei. The cellular exudate consisted of lymphocytes, connective tissue cells and plasma cells and fragmented nuclei. The blood vessels appeared occluded or with hypertrophied walls.

Old tuberculin (April 20, 1945) in dilutions of 1:1,000,000, 1:100,000 and 1:10,000 elicited negative reactions.

DISCUSSION

DR. A. BENSON CANNON: This is a generalized eruption; there are no annular lesions and no infiltrated plaques, but the lesions present are red. One should reserve opinion as to the final diagnosis, especially as there is some doubt about the histologic diagnosis. I suspect that eventually this will develop into lymphoblastoma rather than remain in a benign form, such as granuloma annulare or the Spiegler-Fendt sarcoid. It is my impression that the Spiegler-Fendt sarcoid has been described in modern medicine as eventually becoming malignant.

DR. FRED WISE: I should not think this a Spiegler-Fendt sarcoid from the little knowledge I have of that disease. It certainly had not the slightest resemblance to the case described by Lewis. I think that this is the disseminated type of papular and discoid form of the disease, which is more common in infants and does not become plaquelike. In infants papular granuloma annulare is seen without circinate lesions. In this patient the lesions are unusual, and I should be interested in hearing about further histologic examinations and staining to get a better idea of the whole picture.

DR. PAUL E. BECHET: While many of the lesions are most atypical, there are a few on the back of the hand which present an annular formation with borders more elevated than the central portion, which is distinctly flatter. The appearance of these particular lesions is sufficiently characteristic for one to make the diagnosis of granuloma annulare.

DR. GEORGE M. LEWIS: In regard to the question brought out by Dr. Cannon, I think that Spiegler-Fendt sarcoid is not a good term, as the disease has no relation to the Boeck or the Darrier-Roussy sarcoid. It was thought that the cases could be divided into two types: one, the benign form, in which the disease is localized and the prognosis good for cure, and, the other, the disseminated form, which perhaps might be difficult to distinguish from lymphosarcoma. Certainly, the histologic architecture is distinctive in most cases. It would seem from the literature and from the cases I was able to follow that it is an entity and may be distinguished from other lymphoblastomatous diseases.

DR. EUGENE F. TRAUB: This boy has had two sections removed for microscopic study; the diagnosis is not yet conclusive. But the eruption in this case seems more nearly to conform to generalized granuloma annulare than to anything else, except that there are certain features suggesting lymphoblastoma. The lesions on the leg are certainly peculiarly colored, and the question of Spiegler-Fendt sarcoid was raised because it does actually undergo certain changes similar to lymphoblastoma, and the blood picture is not quite what it should be.

Morphea-Like Epithelioma and Basal Cell Epithelioma of the Face Cured by Roentgen Ray Therapy. Presented by DR. MAURICE J. COSTELLO.

E. D., a woman aged 54, a private patient, was seen by me for the first time on May 23, 1944, at which time she had a lesion on the right cheek which had been present four years. It was sharply marginated, with a scalloped border inclosing a hard waxlike lesion, with a pearly, shiny, elevated nodular border, involving a half-dollar-sized area, including the right ala nasi, the right cheek and the right side of the upper lip. There was a linear ulceration in the right nasolabial fold. She also had two basal cell epitheliomas, one half the size of a dime and the other the size of a dime, on the left cheek and on the left side of the forehead.

During the period between May 23 and Aug. 17, 1944, she received roentgen rays, 4,500 r directed to the lesion on the right cheek, 3,500 r to the lesion on the left cheek and 1,800 r to the lesion on the left side of the forehead.

The patient has hypertension. She states that for some time prior to the development of the epithelioma on the right side of the face she had been treated for nasal polyps, which she says disappeared during treatment for the aforementioned lesion.

The lesion on the right cheek received 4,500 r as follows: 1,500 r unfiltered; 1,450 r filtered through 1 mm. of aluminum; 1,050 r filtered through 2 mm. of aluminum, and 500 r filtered through 3 mm. of aluminum.

DISCUSSION

DR. FRED WISE: The result is excellent.

Radiodermatitis. Presented by DR. ANTHONY C. CIPOLLARO.

M. S., a woman aged 50, consulted me on March 22, 1945. She stated that ten year previously she had a tumor on the left side of the neck, which was excised and found to be a giant cell tumor. The left side of the chest, including the back and the clavicular area, was irradiated. Two years later there was redness, and during the past six months several ulcerated areas have developed in the scapular and clavicular areas.

The patient now presents a large area of radiodermatitis with a superficial ulcer near the clavicle and several smaller and more superficial ulcerations in the scapular region. These ulcerations may have resulted from trauma and scratching,

because there is considerable pruritus. Overlying the radiodermatitis there is also dermatitis resulting from topical remedies.

This case is presented for discussion as to the best therapeutic procedure. Is this a suitable case for plastic surgical intervention?

DISCUSSION

DR. EUGENE F. TRAUB: If only the question of time is involved, why not do a plastic operation now?

DR. A. BENSON CANNON: I saw some photographs by Morginson and the men in St. Louis that showed astounding results after penicillin ointment had been used. The photographs showed the conditions before and after treatment, including a case with ulcers, and the subsequent photographs showed a well healed scar. This substance was tried in several cases. One of the advantages was that it was an analgesic and relieved pain immediately.

DR. ANTHONY C. CIPOLLARO: I am glad that the discussion of penicillin ointment came up, because when I first saw the patient I treated the ulcerated areas with penicillin but found that a dermatitis developed around the ulcerations; then I used halibut liver oil ointment. Further dermatitis developed, and I had to stop these treatments. Now she has radiodermatitis and remnants of superficial ulcerations. I agree that the only way to cure this condition permanently is by a plastic operation.

Nummular Eczema. Presented by DR. ANTHONY C. CIPOLLARO.

C. S., a man aged 52, American born, consulted me on Jan. 16, 1945, because of an eruption of five days' duration, which was fairly generalized. He had had a similar eruption about ten years previously. When he was first seen by me, the patient had an exudative vesicular dermatitis in patches and in groups of lesions, affecting most portions of the body. After several weeks of treatment with soothing topical remedies, baths, wet dressings and roentgen rays, the eruption improved greatly. Then new lesions appeared at the margins of the old lesions. These have been for the most part grouped vesicles with severe pruritus, most severe at bedtime. Treatment has been continued with various topical remedies, roentgen rays, nicotinic acid and other drugs, with steady, but extremely slow improvement. It was thought that he might have an aberrant form of dermatitis herpetiformis, and he had laboratory tests carried out with this in view. His basal metabolic rate was normal. His blood count was normal except for 9 per cent eosinophils. An intradermal test with toxoid gave a slight reaction. Results of patch tests with potassium iodide and sodium bromide were negative. A biopsy section showed structure of nummular eczema.

The case is presented for diagnosis and for therapeutic suggestions.

DISCUSSION

DR. EUGENE F. TRAUB: I wonder why the Senear-Usher type of pemphigus has been excluded in this case.

DR. MAURICE J. COSTELLO: My clinical impression is that the disease in this case is chronic lichenoid and discoid dermatitis. I thought that this patient was Jewish until it was mentioned that he was not.

DR. GEORGE C. ANDREWS: This man has carious and infected teeth. However, I also got the impression that this might be some erythematous type of pemphigus —the Senear-Usher type. The only objection to this diagnosis is that the vesicular lesions on the palms looked like an "id," and this is not expected in the Senear-Usher type. I think that the man's general condition should be studied; the blood count, the leukocyte count and roentgenograms should be examined for focal infections, and perhaps in that way one may arrive at the causative factors. I do not see how the eruption can be called any more than eczema at present.

DR. FRED WISE: My impression of this eruption is that it is a good example of exudative discoid dermatosis, described by Sulzberger and Garbe.

DR. FRANK C. COMBES: I agree with Drs. Costello and Wise. I think that this patient would do much better if he got out into the country.

DR. ANTHONY C. CIPOLLARO: I appreciate the discussion. I considered this case one of nummular eczema because all the scientific evidence points to this diagnosis. The biopsy indicates that, and there was no evidence of Senear-Usher disease in the biopsy specimen. The blood count showed 5,000,000 red blood cells, and the differential count was normal except for the eosinophils, which were 9 per cent. I did not study his teeth, but the doctor who examined him said he was all right physically. He is definitely psychopathic. He had a "nervous breakdown" at 18 and has had trouble with his mother all his life. He lives out in the country, has a good business and is financially independent. The "id" eruption on the palms may be explained by the fact that he has dermatophytosis in addition to the eruption for which he was presented.

Radiodermatitis of the Dorsal Surface of the Hands. Presented by DR. FRED WISE.

J. C., a white woman aged 20, was seen at the Skin and Cancer Unit of the New York Post-Graduate Medical School and Hospital on April 17, 1945, presenting lesions of eighteen months' duration (two months after exposure to roentgen rays). The patient stated that she had been treated with one exposure to roentgen rays nine minutes long, in September 1943. A week later her hands became edematous; many large bullous lesions developed, which subsequently became infected. The infection subsided in two months, after which the lesions broke out on the hands, showing the changes presented today. An ulcer developed on the right thumb in February 1945. During the winter the hands are numb and become tender and edematous.

On the dorsal surfaces of both hands, well demarcated by sharp straight lines at about the junction of the middle and upper thirds of the hands, are pigmented and depigmented and telangiectatic areas. The skin is atrophic and greatly reduced in elasticity. There are several irregular raised rough hyperkeratotic growths, from the size of a pinhead to that of a pea. A shallow ulcer the size of a small bean, which is irregular, painful and tender, developed on Feb. 17, 1945, on the inner surface of the distal phalanx of the right thumb. On diascopic pressure some telangiectatic areas fade almost entirely, leaving yellowish spots, but others are not altered.

The patient is being referred for plastic repair of the ulceration on the thumb and destruction by electrocoagulation of the hyperkeratotic plugs. A salve containing vitamins A and D was prescribed to be used as an emollient application for the hands. She was advised to avoid exposing her hands to the sun, to keep them out of dishwater and to prevent contact with irritating soaps and chemicals.

The erythrocyte count was 3,750,000, and the leukocyte count was 3,750 per cubic millimeter. The hemoglobin was 11.8 Gm. per hundred cubic centimeters, or 71 per cent. The color index and the differential count were normal.

Tuberculosis of the Skin. Presented by DR. FRED WISE.

K. B., a Negro woman aged 34, registered at the Skin and Cancer Unit of the New York Post-Graduate Medical School and Hospital on April 10, 1945, presenting lesions of seven months' duration. She had had "rheumatism of the hips" at 16 years of age. She complains of pain in the chest and shortness of breath on moderate exertion. The first pregnancy resulted in a stillbirth at nine months; the second, in a miscarriage at six months, and the third, in a premature baby at seven months, which lived for seven months. She was treated for syphilis at the Board of Health, with intravenous and intramuscular injections for one year, from 1938 to 1939. In 1941 she was given twelve more injections into the hip by a private physician, after which she was discharged as cured. The last six or seven hematologic tests were said to be negative.

The patient presents three ulcerated lesions. The lesion on the middle of the anterior surface of the left arm began in June 1944; the one on the upper part of the inner surface of the left breast, in July, and the one on the base of the left side of the chest, in October. The lesion on the arm is 2.5 by 1.5 cm., ovoid, with an ulceration in the center which is excavated, with a dirty grayish base from which a mucopurulent fluid exudes. There is a satellite pea-sized lesion 3 cm. below it. The lesion on the breast is irregular, ulcerated in the center and raised a few millimeters, with many fine clawlike keloidal branchings extending to the periphery. It is tender and infiltrated, the tissues being matted together, but the whole mass moves fairly freely on the subcutaneous structures. The lesion on the base of the left side of the chest, 2 by 0.5 cm. in size and 1 cm. thick, is placed horizontally. It has a linear ulceration in the center, sloping rounded surfaces and is doughy in consistency.

The Wassermann and the Kahn reactions of the blood were negative, and the urine was normal. The hemogram was normal except for a white cell count of 3,800. A roentgenologic examination of the chest, recently taken at the Board of Health, was said to show osteitis of the ribs.

A histologic section, taken from the lesion of the arm, was examined by Dr. Charles F. Sims, and the eruption was diagnosed as tuberculosis of the skin. It was interpreted as follows:

"The epidermis is decidedly acanthotic in the center of the section. However, at one point it has broken down. The upper, middle and deep parts of the corium present a massive cellular reaction composed of groups of epithelioid cells surrounded in part by a moderate mantle of small round cells. In the area of ulceration many polymorphonuclear cells may be noted. Some scattered giant cells are visible. The vessels throughout are moderately dilated."

DISCUSSION

DR. FRANK C. COMBES: I do not think that there is sufficient evidence present to call this tuberculosis. I should want further study done to eliminate the possibilities of its being a gumma. It is unusual for this type of tuberculosis to develop at this patient's age, although tuberculosis is common in those areas. One should be able to find tubercle bacilli in these lesions.

DR. MAURICE J. COSTELLO: I think that occasionally in patients suffering from scrofuloderma lesions like this may be seen, and I should be inclined to agree with the presenting diagnosis for that reason. The lesions arising independent of underlying tuberculous foci may be regarded as tuberculous gummas.

DR. A. BENSON CANNON: I suggest that inasmuch as she is known to have syphilis, even though her Wassermann reaction was negative, this patient be given the benefit of therapy, unless the eruption is proved by innoculation of a guinea pig to be tuberculous. I understand that this has not as yet been done.

DR. FRED WISE: I appreciate the significance of Dr. Cannon's remarks, but I have a section from the lesion on the arm which shows typical tuberculosis; no other diagnosis could possibly be made under the circumstances.

A Case for Diagnosis (Poikiloderma atrophicans vasculare?). Presented by DR. MAURICE J. COSTELLO.

J. G., a man aged 52, from the outpatient department of Lenox Hill Hospital, presents several linear and round areas consisting of radiating telangiectatic vessels. These patches blanch on pressure, and there is a suggestion of atrophy in the center of them. They are located mainly above the waistline, on the right pectoral region, the supraclavicular area and the back.

The patient stated that he has had several epistaxes during the past year.

This eruption began in 1920. He had had streptococcic septicemia in 1933, and, after an operation for submucous resection, has a traumatic perforation of the nasal septum.

The Wassermann reaction was negative, and his gallbladder had been removed some years ago.

DISCUSSION

DR. FRED WISE: This is a difficult case to diagnose. It does not resemble the classic ones, such as the one I presented. But I understand that the changes in elastic tissue are characteristic, and poikiloderma may sometimes be differentiated on the basis of these changes alone. It would be interesting to get a biopsy specimen from this lesion and to see whether any peculiar changes in the elastic tissue are present.

DR. GEORGE C. ANDREWS: The man's flushed face, telangiectasis and acneform lesions on the sternal area are characteristic of polycythemia vera, and he said that since last year he has become extremely short of breath.

Parapsoriasis en Gouttes. Presented by DR. FRED WISE.

R. R., a man aged 28, registered at the Skin and Cancer Unit of the New York Post-Graduate Medical School and Hospital on April 12, 1945, presenting lesions of three months' duration. He gave no history of previous cutaneous disorders. His general health has been unaffected. There are no subjective symptoms.

The lesions first appeared on the waist and the upper extremities and spread on the following day over the entire body. The patches did not undergo involution, nor have they become aggravated. The lesions are generalized, superficial and profuse, covering the entire trunk and extremities, except for the middle and the distal phalanges, the right palm and the soles. The scalp and the face are unaffected except for the eyelids and infraorbital regions.

The lesions vary in color from yellowish red to bright red. They consist of papules from the size of a pinhead to that of a split pea to that of a bean, forming irregular networks enclosing the white irregular areas of the unaffected skin. Some of the lesions are covered with fine, dry, sparse central and peripheral scaling, the latter being most pronounced on the lower limbs. Most of the lesions show delicate parallel lines of the finely wrinkled skin, which are arrayed oblong on the upper extremities and obliquely on the back. The lesions fade partially on diascopic pressure, revealing yellowish patches, some showing fine telangiectatic capillaries. The lesions on the legs are only slightly altered. The left epitrochlear and axillary lymph nodes are enlarged.

The routine laboratory tests revealed no abnormalities. From a section taken from the right thigh the disease was diagnosed by Dr. Charles F. Sims as "possible parapsoriasis." The interpretation is as follows:

"The epidermis is mildly and somewhat irregularly acanthotic. At one or two points slight parakeratosis may be noted, particularly manifest over areas in which an infiltration is present in the corium. The latter may be seen in the papillary and subpapillary zones, as small masses hugging the epidermodermal junction. At these points the basal cell margin is somewhat disorganized, and exocytosis is visible. Histologically, psoriasis can be eliminated."

DISCUSSION

DR. MAURICE J. COSTELLO: I saw several small oval atrophic lesions in addition to the others. I suggest the diagnosis of parapsoriasis atrophicans, similar to the disease in the case which I presented to this society several months ago.

A Case for Diagnosis (Sarcoid? Leprosy?). Presented by DR. A. BENSON CANNON.

P. L., a Filipino aged 45, was born in the Philippine Islands. His family history is not remarkable. At 16 years of age he left the Philippine Islands and has lived in the United States ever since; he is a steward.

On arriving in this country he felt a numbness of the left foot and lower part of the leg, which gradually diminished over a period of eight years. During the past ten years, however, he has noticed some numbness of both feet.

In 1939 a dollar-sized lesion developed on the right cheek, which gradually spread to involve the present location. It has been asymptomatic and has diminished in the past two years.

Examination reveals a coppery, slightly indurated eruption with an irregular, clearly demarcated border. Some of the border is slightly elevated. There is no generalized lymphadenopathy. There is definitely diminished sensation to pain, temperature and light touch in both lower extremities, most decided in the toes. The deep and the superficial reflexes are normal. Otherwise, the physical examination shows essentially a normal condition.

Examination of the blood showed: hemoglobin, 16.0 Gm.; red blood cells, 5,900,000; white blood cells, 9,100, with 56 per cent polymorphonuclear leukocytes, 43 per cent lymphocytes and 1 per cent basophils. The urine was normal. The erythrocyte sedimentation rate was 9 mm. per hour.

DISCUSSION

DR. MAURICE J. COSTELLO: From the clinical point of view this patient has leprosy. The lesions are fairly typical; he has in addition to the highly suggestive cutaneous lesions a visibly enlarged great auricular nerve on the right side. I think that the diagnosis will be substantiated by further examinations.

DR. FRANK C. COMBES: Is this the tuberculoid manifestation of sarcoid?

DR. FRED WISE: In this patient a careful search should be made for bacilli, in the skin as well as the nasal mucosa. I have little doubt about this being leprosy of the type first described by J. Jadassohn.

Poikiloderma Vasculare Atrophicans (Jacobi). Presented by DR. FRED WISE.

F. S., a woman aged 27, under the care of Dr. Cole of Cleveland, registered at the Skin and Cancer Unit of the New York Post-Graduate Medical School and Hospital on April 13, 1945, presenting lesions of twenty years' duration. There is no history of a similar cutaneous disorder in the immediate family or relatives. She had measles and scarlet fever during childhood. The tonsils were removed when she was 14 years of age. She began to menstruate when she was 11. Menses have been regular and normal since. She is subject to colds and has been having headaches in the region of the right temple for the past two years. Her general health seems to have been unaffected. There are no subjective symptoms.

When the patient was 7, there appeared a round smooth white scaly patch, 2.5 cm. in circumference, on the front of the right thigh and similar spots on the anterior surface of the forearms. These never regressed but became larger until she reached the age of 14. They have since assumed the characteristics of the other lesions. When she was 14, she began to avoid being in the sunshine, because she perspired excessively. From 14 to 20 years of age she payed no attention to her skin. At 20 she noticed patches on the outer surfaces and the sides of the thighs, on the buttocks, and in the left axilla. Since then brownish patches have developed on the hypogastric region. For the past two years the brownish patches have been appearing on the abdomen, the chest and the back. The redness on the breasts has also appeared within the past two years.

The patient presents symmetric lesions on the trunk and the extremities. Almost the entire body is involved except for some parts of the upper halves of the breasts and parts of the abdomen, the thighs and the legs. Most of the lesions consist of reddish telangiectatic areas, together with atrophic spots revealing a retiform arrangement and covered in some areas with dry, flakelike scales, loosened at the edges. These lesions are more extensive on the arms, the buttocks and the lower limbs, down to below the knees, being almost confluent in these areas. There are also confluent areas around the neck. The upper part of the back, the breasts and the abdomen are comparatively free of lesions except for irregular hyperpigmented spots varying from the size of a pea to that of a palm. The face is erythematous, and the eyelids are edematous. There are some telangiectatic vessels on the cheeks. The soles are hyperkeratotic, and to a lesser extent so are the

palms. The oral mucosa and the nails appear normal. There are no enlarged lymph nodes.

The routine laboratory tests revealed normal conditions.

According to a section taken from the right thigh, the disease was diagnosed by Dr. Charles F. Sims as poikiloderma. The interpretation is as follows:

"The epidermis is thinned, with obliteration of the rete pegs and the corresponding papillary bodies. Basal cell layer liquefaction may be noted in many parts of the section. A mild exocytosis is present. In the upper corium is a diffuse cellular reaction composed for the most part of small round cells and an occasional wandering connective tissue cell. Parenchymatous edema of the collagen may be noted in the upper corium. The vessels of the upper corium are dilated, and some appear telangiectatic. Many scattered chromatophores are present.

"Weigert's elastic tissue stain shows elastorrhexis in the zone of infiltration. Perles' stain is negative for hemosiderin."

PHILADELPHIA DERMATOLOGICAL SOCIETY

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May 18, 1945

Angioneurotic Edema. Presented by DR. ISADORE ZUGERMAN.

R. S., a white man aged 22, presents a palpable thickening of the upper lip extending to the mustache area. Erythema is present occasionally. One year ago the patient was stationed at a naval base in the Aleutian Islands. It was at that time that he first noticed, and was treated for, a persistent swelling of his upper lip, which he said "sticks like needles and draws."

The Wassermann reaction of the blood was negative. The urine was normal. A complete blood count was within normal limits.

DISCUSSION

DR. HERBERT J. SMITH: The swelling does not look like angioneurotic edema to me. It is more or less constant rather than transitory, although it sometimes becomes aggravated. However, it does not become much greater than it is at the present time. I believe that it is of allergic origin.

DR. D. M. SIDLICK: The patient's statement that the swelling has never disappeared would speak against the diagnosis of angioneurotic edema. I think that it is lymphangioma circumscriptum congenitale.

DR. HERMAN BEERMAN: I suggest the possibility of elephantiasis nostras.

DR. FRED D. WEIDMAN: I thought that maybe it was an example of so-called woody edema, which appears generally near foci of infection, for example, on the cheek where there are underlying foci of sinusitis. If there were apical abscesses I suppose that would strengthen that idea. So far as I can learn, there are no nearby foci of infection to explain woody edema. I think that all the members feel that the enlargement of the lip is due to fluid of some kind. I think that the swelling is diffuse lymphangioma circumscriptum congenital. It is in one of the common positions for this lesion. Usually, it is true, it occurs in persons much younger than this patient.

DR. ISADORE ZUGERMAN: The enlargement is confined to the area of hair growth. The ends of the lip are not involved. None of his physicians were able to do anything for him. He is extremely uncomfortable, and I do not know what to do for him. I should appreciate suggestions.

DR. FRED D. WEIDMAN: I think that the diagnosis will have to be settled first.

DR. ISADORE ZUGERMAN: The possibility of trauma was considered. I asked if his lip had been punched at any time. He is not a boxer, and he said that he had never been struck.

Pemphigus Vulgaris. Presented by DR. MEYER L. NIEDELMAN.

P. M., a white man aged 53, presents patchy denudations of the epithelium in the mouth, especially on the soft palate. A few of the lesions are covered with a white membrane and resemble leukoplakia. There is crusting of both nares. Scattered over the trunk and the face are numerous crusted lesions, the remains of previous bullae. Six months ago the patient first noted what he called boils in the left axilla. His family physician said that they were bullae which subsequently underwent suppuration. Shortly thereafter painful oral lesions developed, which became vesicular. At first localized on the tongue, they later spread to the rest of the buccal mucous membrane and the soft palate. Then both flaccid and tense bullae developed on various parts of the trunk. These appeared suddenly on normal skin, ruptured and formed crusts. He has lost about 10 pounds (4.5 Kg.) in the last two months because of inability to eat, due to the painful oral lesions. One month ago bullous and vesicular lesions developed in the nose, which have become crusted and have caused difficulty in breathing. The patient has been treated by various physicians for Vincent's infection of the mouth and avitaminosis.

DISCUSSION

DR. BERNARD L. KAHN: I had a similar case in which the eruption cleared completely with penicillin.

DR. CARROLL S. WRIGHT: I think that the more one sees of pemphigus, the more one realizes that there is no single remedy that works in all cases. Years ago Dr. Schamberg became enthusiastic about colonic irrigations. After employing them for some time, 1 patient recovered and lived for three years. Another woman did likewise for ten years. Both patients were Jewish. In other than these 2 cases, my associates and I saw no more good results from colonic irrigations. Then came the vogue of treatment with iron cacodylate and coagulin. Later we heard from Dr. Ludy of good results with the use of thiamine. We have a patient at present who remains absolutely free of lesions as long as she takes acetarsone. Still, the last patient I saw treated with acetarsone had an extremely malignant eruption and died. It cannot be said that any one remedy will work in every case. I think that is what is going to happen with penicillin. It is worth trying, however, I had a patient recently who could not take sulfonamide drugs by mouth; we used to spray her with a sulfonamide lotion (5 per cent sulfathiazole), and every lesion healed. She went home and lived for eight months before suffering a recurrence. The sulfonamide lotion was again used, but it was ineffective and she died.

DR. ISADORE ZUGERMAN: I noticed the extensive involvement of the patient's mouth and the bad condition of his teeth. I suggest that he receive all necessary dental care. It may be of help to him.

DR. JOHN F. LENTZ: I had 1 patient who died in spite of and another who responded fairly well to the use of sulfonamide drugs in powder form. The latter patient willingly donated his blood to the former, but it did not help.

DR. MEYER L. NIEDELMAN: Penicillin has been used in treating pemphigus without any effect on the disease. Patients with lesions in the mouth fail rapidly in health, and the prognosis is bad. The patient previously mentioned by Dr. Wright first had lesions in his larynx; six months later he had lesions in the mouth and then on the body. He died five days after the explosive appearance of the generalized cutaneous lesions.

DR. D. M. SIDLICK: I do not think that it is a safe practice to base a diagnosis simply on lesions in the mouth for the reason that even lesions that appear bullous are not always proved to be pemphigus.

Dermatofibroma (Fibrosarcoma?). Presented by DR. SIMON KATZ.

J. C. J., a white man aged 63, presents in the lumbosacral region a sclerotic plaque measuring 2.5 by 4.0 cm., in which there are several painless firm reddish nodules, some of which are elevated above the surface. The plaque is only slightly adherent to the subcutaneous tissue. When first seen, the plaque was bluish and contained several purplish nodules in the center, but the picture has changed since the application of roentgen ray therapy. In 1912, a carbuncle developed over the lumbosacral region. A salve was applied, and healing took place in four weeks, leaving two raised scars. Fifteen months ago the areas became larger, and a small ulcer appeared in the center. It never itched and was never treated by any physician. The patient has a history of recurrent furunculosis from the age of 15 to 53 years.

A roentgenogram of the teeth showed no infection. The urine in November 1944 was normal. The serologic reaction of the blood for syphilis was negative on Sept. 25, 1944. On November 15, the sugar and urea content of the blood were 109 and 11 mg. respectively per hundred cubic centimeters of blood. A blood count showed no significant abnormalities.

On Oct. 7, 1944, Dr. Weidman reported on the first biopsy as follows: "The epidermis was normal. The corium was almost entirely occupied by newly formed bundles of fibrous tissue. The nuclei within the bundles were numerous and of mature type. There was not the slightest evidence of sarcomatous change."

The report of the second biopsy was as follows: "The epidermis was normal except for secondary atrophic changes. The corium was thickened to a distance of about 8 mm. by a solid mass of tumor tissue. There were not any remains of the collagenous tissue, but a few sweat ducts still remained. The tumor infiltrated extensively into the subcutaneous fat. As a basis for the tumor there was a whorling stroma of moderately dense fibrous tissue which was fairly richly vascularized. On it, great numbers of spindle cells were placed; the nuclei of many of these were deformed; sometimes they were even stellate. In spite of the fact that the tumor involved the subcutaneous fat, I did not believe that it was malignant. It was true that the tumor cells were closely placed, but at no position were they of the richly chromatinized type which should have appeared had they been sarcomatous."

From Oct. 26 to Nov. 17, 1944, the patient received roentgen ray therapy—100 kilovolts, 5 milliamperes, at a distance of 30 cm., with a 4 mm. aluminum filter, 200 r per treatment, two to three times weekly, for a total of 2,000 r (erythema dose equals 600 r).

DISCUSSION

DR. SIMON KATZ: When this patient was first seen, he had a number of reddish and bluish nodules in this plaque, which gave it the appearance of a fibrosarcoma. The first biopsy section did not show any evidence of malignant growth. It was suggested that another section be taken from one of the bluish nodules, but neither did the second section show any evidence of malignant change. In the absence of highly chromatinized cells a diagnosis of fibrosarcoma could not be made. After roentgen ray therapy most of the nodules disappeared. I noticed tonight that one of the nodules is returning. The best treatment would be wide excision, which the patient has refused.

DR. FRED D. WEIDMAN: The lesion has behaved like a fibrosarcoma, but histologically the particular tissue I looked at did not show any sarcomatous features even though it did come from the bluish part. Maybe those bluish parts had been irradiated previous to being submitted to the second biopsy. That might account for the adult type of cell that appeared at the second biopsy. I recall that in the first case of this type that I ever studied the entire lesion was excised and there were certain parts which showed only scar tissue where the lesion had regressed spontaneously, always to crop up in some other places. In histologic study so much depends on the part of the lesion that has been selected and whether it has been previously treated.

Hodgkin's Disease of the Skin Without Demonstrable Systemic Involvement. Presented by DR. LOUIS GOLDSTEIN.

C. S., a white woman aged 38, whose father died of tuberculosis fourteen years ago and whose mother died of pneumonia, and a sister of cancer of the breast, presents on both upper extremities, the lower part of the back and the upper part of the thighs a number of discrete, scattered nodules of various sizes, the largest of which is the size of a split pea. The color of some nodules is that of normal skin, while a few show inflammatory changes with a tendency to desquamation. One may also see light brown pigmented spots, the remains of lesions that have undergone involution. The patient, a frail young woman of the visceroptotic type, had a hysterectomy for a fibroid tumor of the uterus seven years ago. She had an attack of pleurisy six years ago. She is also allergic to grasses.

The disease started seven years ago on the upper extremities as a few discrete nodules, the color of which was that of normal skin. The nodules gradually became inflammatory. The surface epithelium would desquamate, and finally the lesions would disappear, leaving behind brown pigmented spots. During these seven years she has never been free of the lesions. As the old ones would heal, new crops would appear. Itching has been slight, but more intense when a new lesion appeared. Some nodules in their terminal stages showed a tendency to superficial ulceration.

The spleen was not palpable. The liver showed no enlargement. The right submaxillary gland was palpable, and a nodule the size of an almond was felt in the right axilla. The inguinal nodes were slightly palpable.

The serologic reaction of the blood for syphilis was negative. The urine was normal. The sedimentation rate ranged from 11 to 15 mm. in one hour. The sugar content of the blood was 84 mg. and the urea nitrogen 14 mg., per hundred cubic centimeters of blood. The tuberculin test with purified protein derivative, 0.00002 Gm., gave a positive reaction. Complete blood cell counts on Dec. 7, 1944 and May 7, 1945 gave essentially normal findings.

DISCUSSION

DR. D. M. SIDLICK: This is a case in which the diagnosis depends entirely on the laboratory studies. Clinically the eruption certainly does not have any resemblance to Hodgkin's disease of the skin, and the history also is a bit contradictory. She has had the eruption for the past seven years. I do not know what the diagnosis is, but clinically the eruption does not appear to be Hodgkin's disease of the skin.

DR. SIMON KATZ: Twelve per cent of the patients with Hodgkin's disease of the skin do not show any glandular adenopathy, sometimes for a long time. In other words, one can have cutaneous lesions in Hodgkin's disease of the skin before any glandular adenopathy develops.

DR. FRED D. WEIDMAN: The diagnosis histologically is made on the basis of what the sections show. It does not mean that the histologist is going to discard all the clinical circumstances and say: This must be Hodgkin's disease of the skin because the picture under the microscope is that of Hodgkin's disease. I agree entirely with Dr. Sidlick that clinically this is not a case of Hodgkin's disease of the skin in its typical expression. At the same time, I should like some constructive criticism. If the eruption is not Hodgkin's disease of the skin, what is it? This woman has a straight chain of large nodes in her left groin and one node, the size of a pigeon's egg, in her right axilla. She is pale and thin and has a much fissued tongue, like that of Vincent's syndrome. She seems anemic. I think that if she is to be studied the investigation should be along the line of one of the leukemias. There are typical Sternberg-Reed cells, but in this patient there is not the hyperplasia of the epidermis that has always been described in cases of eosinophilic granulomas of the skin.

DR. BERNARD L. KAHN: About two years ago I had a patient with fever as the outstanding symptom. Various diagnoses were made at the time. At first the

fever was thought to be typhoid. Finally, a small gland in the patient's neck was removed, and histologic examination proved it to be Hodgkin's disease of the skin. He had no clinical symptoms for about eight or nine months other than pyrexia and enlargement of that gland. He ultimately died of Hodgkin's disease of the skin.

DR. REUBEN FRIEDMAN: I have a patient who has been seen by ten or twelve consultants in the past two years, all of whom have discussed the question whether or not he has Hodgkin's disease of the skin. My patient has or has had almost everything seen in Hodgkin's disease of the skin but typical Sternberg-Reed cells. The question of making a diagnosis of Hodgkin's disease of the skin without finding typical Sternberg-Reed cells was debated. Tonight we saw a case that appears to have little or nothing other than typical Sternberg-Reed cells to support a clinical diagnosis of Hodgkin's disease of the skin. I am therefore moved to inquire whether the finding of typical Sternberg-Reed cells is in itself conclusive evidence of Hodgkin's disease of the skin.

DR. FRED D. WEIDMAN: The finding of typical Sternberg-Reed cells is not pathognomonic of Hodgkin's disease; they are nothing more or less than monocytes. When seen in combination with the other tissue changes, they support the diagnosis. In Spiegler-Fendt sarcoid, time and again one will see a monocyte which will be identical with one of the multinuclear forms of Sternberg-Reed cells. Such cells can be both mononuclear and multinuclear. In Spiegler-Fendt sarcoid one can see good examples of the multinuclear Sternberg-Reed cell.

DR. LOUIS GOLDSTEIN: I made the diagnosis in this case of "Hodgkin's disease of the skin without systemic involvement" on the basis of the histologic report of Dr. Weidman. It is known that Hodgkin's disease of the skin may at times manifest cutaneous lesions, some of which are specific histologically and others nonspecific. This case is puzzling. If the eruption is Hodgkin's disease of the skin, then, since she has had it for eight years and that period constitutes the average life expectancy for this disease, is it possible that this is the first case of such long duration of Hodgkin's disease of the skin without systemic involvement?

A Case for Diagnosis (Leukemid? Scabies?). Presented by DR. FRED D. WEIDMAN and (by invitation) DR. HARRY BOCKUS.

L. G., a white woman aged 23, well nourished, somewhat pallid, with febrile facies, presents on both arms, but not the fingers, scores of minute excoriated papules. They are distributed diffusely. On both lower extremities there are similar but larger lesions, together with residual pigmentary macules. A number of thick-walled pustular blebs are distributed on the upper part of the thighs and the lower part of the back. The abdomen is scarcely involved. Itching is severe enough to keep the patient awake at night. The liver is enlarged about 2 cm. below the costal border; the spleen is progressively enlarging. Only one lymph node, in the left groin, is enlarged. She has colitis, with occult blood in the stool.

The erythrocytes have ranged down to 3,000,000, and the leukocytes, to 5,100; blood cultures failed to show growth of any organism, and the differential count was normal. The serologic tests for typhus, brucellosis and paratyphoid gave negative results. There were no malarial parasites. Roentgenograms showed that the chest, the skull and the shoulder were normal. Hemolytic streptococci and nonhemolytic staphylococci were isolated from some blebs.

The report on an examination of bone marrow, March 15, 1945, was as follows: "There was no evidence of blood dyscrasia." The report on an examination of the lymph nodes on May 14, 1945 stated: "Histoplasmosis was eliminated. Although the normal architecture was destroyed by massive lymphocytic proliferation, there was no other evidence of Hodgkin's disease of the skin. Many mitotic figures suggested lymphosarcoma."

Penicillin and penicillin ointment caused regression of the cutaneous lesions. She has received transfusions of blood and blood plasma. She has been given a high vitamin diet and treatment with preparations containing iron.

DISCUSSION

DR. FRED D. WEIDMAN: Objectively this eruption suggests scabies, but it is remarkably sparse on the abdomen and the sulfur ointment did not cure the patient. Moreover, at one time the eruption was present on the forehead. I prefer a tentative diagnosis of some leukemoid pathosis (including Hodgkin's disease of the skin). Of course it would have to be aleukemic. The itching appears to exclude a bacterid. Unfortunately, the specimen from the lymph node was not a satisfactory one. It was so mangled that too much credence cannot be given to what it shows in respect to Hodgkin's disease. The internist has not made a diagnosis in this case and calls on the dermatologists for help. I think it is natural in the case of a patient who shows splenomegaly and hepatomegaly and at least one enlarged node that one should think of the possibility of leukosis. The eruption might be an id. I think that one can eliminate scabies satisfactorily, and I do not think that the eruption is urticaria papulosa.

DR. EDWARD F. CORSON: I think that the eruption is a factitial dermatitis because in answer to my questioning the patient insisted that she did not pick the lesions or make any applications to them, and yet at a number of points there were highly pigmented scars. To my mind that is evidence of factitial dermatitis. Many of the pigmented lesions might readily be the end results of the fresh ones seen tonight.

DR. SIMON KATZ: I believe that this eruption represents a systemic infection with local cutaneous phenomena. On the buttocks there are several lesions showing gangrenous centers. I think that the patient should be studied from a systemic angle. I understand that penicillin therapy has done her much good.

DR. J. M. SCHILDKRAUT, Trenton: I think that she has simply a low grade staphylococcic infection.

DR. FRED D. WEIDMAN: There is a certain orderly distribution to the lesions that does not seem to go with dermatitis factitia. Her arms are affected from the shoulders to the wrists on each side, and so are the lower extremities; but practically none of the abdomen is involved, which I think is a point against a diagnosis of dermatitis factitia.

Dermatitis Herpetiformis Caused by Stasis Dermatitis. Presented by DR. LOUIS GOLDSTEIN.

T. S., a white woman aged 60, obese, with an acromegalic facies, presents a rosacea-like flush in the midvertical third of the face. On various parts of the body, especially on the lower part of the abdomen, the buttocks and the upper part of the thighs, she shows numerous excoriations and grouped papules, some with excoriated tops. The entire body, particularly the covered parts, show pigmented post-traumatic spots resembling freckles. The ankles show indurated eczematoid dermatitis (stasis dermatitis). The feet present evidence of dermatophytosis. The legs have decided varicosities. The patient in childhood had eczema, which cleared up at puberty. She had dermatitis of the forearms in 1927 and 1928, caused by "nerves." The patient's mother died of carcinoma. The present disease began four years ago with an eczematoid eruption of the ankles. A year later a generalized dermatitis developed, with severe itching and burning and a sensation of crawling under the skin. This has persisted to date with few remissions. Worry has provoked exacerbations.

The serologic reaction of the blood for syphilis was negative. A hemogram showed an eosinophilia (14 per cent). The urine was normal except for a slight trace of albumin and some leukocytes. The basal metabolic rate was + 11 per cent. A patch test with 50 per cent potassium iodide in petrolatum produced a decided reaction.

The patient has been treated with ultraviolet irradiation and various local applications and has taken sulfapyridine internally since last March. She has improved greatly but occasionally suffers a relapse, though less severe than before.

DISCUSSION

DR. MORRIS MARKOWITZ: I grant that the patient has stasis dermatitis. However, I do not see the grouping and vesicles of dermatitis herpetiformis, and there is hardly any pigmentation. I think that the eruption looks like stasis dermatitis plus scabies.

DR. CARROLL S. WRIGHT: I think that this eruption might be classified as a neurodermatitis. I asked the patient whether she thought there was any relation between her eruption and the state of her nerves. She replied that she had not thought of it before, but at one time last winter when she was practically free of the eruption her daughter called her up from New Mexico and said she wanted to come home. The patient at once started to itch and before morning was covered with patches of dermatitis. This certainly seems to me a case in which the psyche plays a part.

DR. BERNARD L. KAHN: It is more like a case of lichen simplex.

DR. ISADORE ZUGERMAN: The lesions on the ankles do not look like stasis dermatitis; they resemble neurodermatitis.

DR. LOUIS GOLDSTEIN: An "id" eruption secondary to the disease on her ankles was considered as a diagnostic possibility. At that time the ankles were the sites of an exudative dermatitis with secondary infection. Although the patient may be nervous, she had many exacerbations without any apparent reason. In her case I believe that the cause of her eruption resides in the stasis dermatitis of her legs. Whenever that gets worse, she breaks out in a generalized eruption resembling dermatitis herpetiformis.

Parasitic Infection? Scabies? Presented by DR. BERTRAM SHAFFER and DR. HERMAN BEERMAN.

M. B. a white woman aged 67, apparently healthy, presents papular lesions and some excoriations on the trunk and the extremities. She was first seen on Feb. 1, 1945, with a pruritic eruption of several months' duration, which became worse at night. The patient's niece and grandniece had been successfully treated for scabies prior to her first visit. She has osteoporosis of the spine, for which she wears a brace. However, the brace has not been worn for six weeks.

A complete blood count revealed 94 per cent hemoglobin, 4,990,000 erythrocytes and 6,200 leukocytes, with 66 per cent polymorphonuclear leukocytes, 28 per cent lymphocytes and 6 per cent monocytes. Two biopsies have been performed, with no definite diagnosis.

Temporary improvement followed the use of benzyl benzoate emulsion, a sulfur ointment and Yonona, a lotion containing 2 per cent rotenone.

DISCUSSION

DR. FRED D. WEIDMAN: There is something distinctive in the histologic picture in this case. There is a large group of dilated lymphatic spaces surrounded by a broad zone of inflammatory reaction. When I saw them, I thought of the reactions I saw in some sections of creeping eruption, except that these spaces are much larger and more clearcut. These occur deeply, in the midcorium or even below. I think that all dermatologists realize that those are deep spotty lesions, such as might be seen in urticaria pigmentosa. There is no question about its being lymphangitis. Whether a parasite is responsible for that or not, I do not think anybody can say. I do not know of any parasite that produces such an eruption.

DR. J. M. SCHILDKRAUT, Trenton, N. J.: I thought that clinically it looked like pityriasis lichenoides et varioliformis acuta.

DR. EDWARD F. CORSON: There is a uniformity about the lesions which is against a diagnosis of scabies. Nearly all are of the same size and have the same characteristics. The eruption might possibly be papular urticaria or prurigo mitis.

Lupus Vulgaris. Presented by DR. MEYER L. NIEDELMAN.

M. J., a white woman aged 60, presents on the right side of the forehead and scalp, the right side of the face, the left side of the chin and the neck and both gluteal areas large, sharply demarcated, circumscribed, erythematous, reddish brown patches. These patches are not elevated. The borders are hyperpigmented and show numerous apple jelly nodules. There are areas of atrophy scattered throughout the lesions. The lesion on the right frontal area extends into the scalp, showing an area of total alopecia extending about 2 inches (5 cm.) from the hair line. There are no lesions of the mucous membranes. The patient complains of being continuously weak, with inability to do her ordinary housework. She has been under treatment by various competent dermatologists. About thirteen years ago a small lesion developed on the left side of the chin, which subsequently spread. Then lesions developed on both gluteal areas. About four years ago similar lesions developed on the right side of the forehead, the scalp and the right side of the face. The patient came to the United States at the age of 13. She has two brothers and two sisters, both well. There is no family history of tuberculosis.

The patch test with tuberculin elicited a strongly positive reaction. A roentgenogram of the chest was negative for tuberculosis. A complete blood count revealed 68 per cent hemoglobin, 3,200,000 erythrocytes and 4,950 leukocytes, with 51 per cent neutrophils, 47 per cent lymphocytes and 2 per cent monocytes. The urine was normal. The serologic reaction of the blood for syphilis was negative. The blood sugar level was 99 mg. per hundred cubic centimeters. The report on the biopsy specimen was "consistent with lupus vulgaris."

The patient has been given the Gerson diet, large doses of vitamin B complex intramuscularly and injections of crude liver extract. Locally she has been given 10 per cent pyrogallol in petrolatum.

DISCUSSION

DR. D. M. SIDLICK: I think that it is rather unusual for lupus vulgaris to be present for thirteen years without showing greater destructive changes than are found in the present case. Despite the fact that the lesions do cover considerable ground, the only destructive change evident clinically is atrophy. I do not think that the eruption is lupus vulgaris. I think that it is lupus erythematosus.

DR. CARROLL S. WRIGHT: Dr. Gross and I saw this patient some years ago, and we both thought that she had lupus vulgaris. At that time the patches were not more than one-third the size they are now. The eruption has therefore extended rather rapidly for lupus vulgaris. At that time we gave her a salt-free diet and treated her with gold and solid carbon dioxide. We had her under observation for six or eight months, and the lesions did not increase in size during that time. I still feel that the disease is lupus vulgaris, though somewhat atypical.

DR. MEYER L. NIEDELMAN: I do not believe that there is any question about the diagnosis, although this may fit into the type known as lupus vulgaris erythematosus. It is rather unusual to start at the age of 47, and the lesions have progressed rapidly in a period of three years. She also had two large areas in the gluteal region which show typical apple jelly nodules.

DR. CARMEN C. THOMAS: Dr. Urbach treats lesions of this sort with pyrogallol and irradiation, with good results.

DR. MEYER L. NIEDELMAN: I have used pyrogallol in 10 per cent strength. This caused a tremendous inflammatory reaction, which lasted six weeks before it quieted.

Acrokeratosis Verruciformis (Hopf). Presented by DR. MEYER L. NIEDELMAN.

M. D., a white woman aged 37, and her son, P. D., aged 17 years, present lesions on the dorsal and the palmar surfaces of the hands and on the dorsa of

the feet. The lesions are also present for several inches above the wrists and the ankles. Most of these verruca-plana-like papules are discrete, but many are confluent. They vary in diameter from the size of a pinpoint to 4 mm. Some are elevated up to 1 to 2 mm. above the surface of the skin. The lesions on the palms and the soles are few in number and almost disappear as they approach the center. There are no subjective symptoms. Both patients have keratoses of the palms and the soles. Their color varies from a flesh pink to a light brown. The lesions on the dorsum are flat and smooth, although a few are verrucous. Many are polygonal and resemble lichen planus. Even the confluency of the papules does not destroy their individual configuration. On biopsy the lesions cut with some resistance, resembling fibrous tissue. Many of the lesions have a sheen. The lesions on the palms and the soles appear embedded and are "shotty" to touch. They are discrete and are better felt than seen. When the skin is put on the stretch, one can see a papule extending above the surface. This appearance is probably due to pressure. P. D. consulted me because of warts on his hands. He said that these had appeared at or about 9 months of age, according to his mother. When he was questioned further, it was found that his mother and two sisters have a similar disease. In all the patients the lesions had appeared between 6 months and 1 year of age. There is no consanguinity. There are 14 patients in one family.

The serologic reactions of the blood for syphilis, a complete blood count, the results of urinalyses and the blood sugar level were normal. The basal metabolic rate of M. D. was —15 per cent.

The biopsy was reported by Dr. Weidman as follows: "The reaction was one of the purest examples of acanthosis and hyperkeratosis that could be imagined. On the surface of the skin the stratum corneum appeared purely as hyperkeratosis—not a trace of parakeratosis. It was excessively thick, three or four times the thickness of the rest of the epidermis. Correspondingly, the stratum granulosum was thick and conspicuous, and the prickle cells were moderately hyperplastic. The general configuration of the interpapillary pegs was well maintained. At the most, they were only broadened or thinned, and all of them extended downward to a uniform level. The corium exhibited no pathologic changes. The diagnosis was acrokeratosis verruciformis."

DISCUSSION

Dr. Marjory K. Hardy: I presented the cousins of these patients about two and a half years ago. At that time the woman was pregnant, and the child of that pregnancy, at the age of 13 months, had developed similar lesions. The male cousin of this woman was originally seen at the Philadelphia General Hospital about 1941, and his disease was diagnosed by Dr. Gross. A number of such cases had previously been presented at the Atlantic Dermatologic Conference in Baltimore.

Dr. Fritz Callomont (by invitation): This case of acrokeratosis verruciformis is most significant with regard to the occurrence of this cutaneous disease in 14 members of three generations of one family.

Book Reviews

Skin Diseases, Nutrition and Metabolism. By Erich Urbach, M.D., Associate in Dermatology, University of Pennsylvania School of Medicine; Chief of Department of Allergy, Jewish Hospital, Philadelphia, with the collaboration of Edward B. LeWinn, M.D., Associate in Medicine, Jewish Hospital, Philadelphia. First edition, cloth. Price $10. Pp. 634, with 266 illustrations. New York: Grune & Stratton, Inc., 1946.

The book is arranged in five parts. Part I is concerned with the biochemistry and physiology of the skin, with a particular attempt to show the influence of diet on various constituents of the skin and metabolism. Part II covers the dermatoses due to malnutrition, especially vitamin deficiencies and allergies. Part III attempts to coordinate gastrointestinal disturbances with cutaneous diseases. Part IV discusses some dermatoses specifically and points out the possible dietary treatment for these diseases. Part V gives rather complete nutritional tables.

This book is a compilation of material in which dermatologic diseases are studied from a new approach; that is, much of the material is covered in previous texts and in the literature, but no textbook which confines itself strictly to the relationship of metabolism and nutrition to diseases of the skin has been published before. Insofar as a new approach to dermatology is always of interest and value, the book is therefore worth while; however, much of the material and many of the conclusions are too indefinite and of too doubtful use to warrant the authority granted them by publication in a textbook. As an example, the low fat diet as a treatment for psoriasis is discussed at length and recommended somewhat too vigorously considering the lack of definite results in the practical use of such a routine. Another example of this type is the great amount of space devoted to the use of "propeptans" in the treatment of urticaria and atopic eczema, whereas the general use and availability is limited. Such treatment is not mentioned in the latest edition of such texts as those by Sutton and Sutton or Ormsby and Montgomery, and even in an allergy text such as Sulzberger's the use of "propeptans" is covered by a small footnote.

The whole text would be more valuable if instead of all the literature written on the subject, especially that in foreign languages, being quoted any statements had been qualified directly or omitted if not found to be generally true. This is illustrated by the quotation from Hoff and Riehl that chloasma and other types of pigmentation respond to huge doses of vitamin C. This effect of vitamin C is dubious, to say the least, and the use of vitamin C in this way is not even mentioned in the standard textbooks.

Many other statements are given the authority of being printed in a text when actually the results claimed are indefinite or at least variable. This is especially true when the foreign language literature is cited, and, except for the section on vitamins, literature in non-English language makes up 57 per cent of the bibliography, whereas in the sections on vitamins only 18 per cent of the bibliography is from sources in a foreign language. In this connection, it is interesting to note that the most valuable and really worth while part of the text covers the relationship of vitamins to cutaneous diseases.

A part of the text that is of interest and may be useful at times consists of numerous tables. Here, at least, is a readily available reference source for information which covers subjects as diverse as conversion of grains into grams and the normal values for various lipids in the skin and plasma.

As an editorial point, it would be better if the "Standard Nomenclature of Disease" had been followed exactly and such terms as "lichen ruber planus" for "lichen planus" and "dermatitis" for "eczema" had not been used.

On the whole, the subject has been covered thoroughly, and if the material had been presented as a monograph with bibliographic references rather than as an authoritative text it would have been better.